Committee Meeting

of

SENATE ENVIRONMENT AND ENERGY COMMITTEE

"The Committee will meet to hear testimony from invited speakers on steps that the State can take to modernize the electrical grid and prepare for the interconnection of more renewable energy resources"

LOCATION: Committee Room 6
State House Annex
Trenton, New Jersey

DATE: June 8, 2023
10:00 a.m.

MEMBERS OF COMMITTEE PRESENT:

Senator Bob Smith, Chair
Senator Linda R. Greenstein, Vice Chair
Senator Troy Singleton
Senator Edward R. Durr, Jr.
Senator Jean Stanfield

ALSO PRESENT:

Eric Hansen
Office of Legislative Services
Committee Aide

Joseph Gurrentz, Ph.D.
Matthew Peterson
Senate Majority
Committee Aides

Jonathan Vitale
Senate Republican
Committee Aide

Meeting Recorded and Transcribed by
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NEW JERSEY STATE LEGISLATURE

SENATE ENVIRONMENT AND ENERGY COMMITTEE

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COMMITTEE NOTICE

TO: MEMBERS OF THE SENATE ENVIRONMENT AND ENERGY COMMITTEE

FROM: SENATOR BOB SMITH, CHAIRMAN

SUBJECT: **COMMITTEE MEETING - JUNE 8, 2023**

The public may address comments and questions to Eric Hansen, Committee Aide, or make bill status and scheduling inquiries to Pamela Cocroft, Secretary, at (609)847-3855, fax (609)292-0561, or e-mail: OLSAideSEN@njleg.org. Written and electronic comments, questions and testimony submitted to the committee by the public, as well as recordings and transcripts, if any, of oral testimony, are government records and will be available to the public upon request.

The Senate Environment and Energy Committee will meet on Thursday, June 8, 2023 at 10:00 AM in Committee Room 6, 1st Floor, State House Annex, Trenton, New Jersey.

The committee will meet to hear testimony from invited speakers on steps that the State can take to modernize the electrical grid and prepare for the interconnection of more renewable energy resources.

The following bill(s) will be considered:

S2708 Zwicker	Requires DEP to consider potential impacts to natural resources when classifying dams according to hazard potential.
S3255 Diegnan/Oroho	Increases percentage of reclaimed asphalt pavement that can be used for local road projects.
S3914 Smith, B	Requires electric public utilities to submit new tariffs for commercial customers for BPU approval; regulates non-volumetric electricity fees charged to operators of fast charging electric vehicle chargers.

(OVER)

FOR DISCUSSION ONLY:

S3177 Greenstein/Smith, B	"Protecting Against Forever Chemicals Act"; establishes requirements, prohibitions, and programs for regulation of perfluoroalkyl and polyfluoroalkyl substances (PFAS).

Issued 6/1/23

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SENATOR BOB SMITH (Chair): Good morning, everyone, welcome to what is clearly proving once again to be the most interesting committee in the Legislature.

A little modification to the plan for today. We're going to take 3914 off the agenda. It appears it's not ready for prime time yet, so, if you're here for that and only that, you are now released.

The plan for today is as follows: We are going to have a number of speakers on where we stand on our grid and what we need to do to have any chance of survival-- And, by the way, today is -- the last couple of days -- just a little taste of global warming. Just the tiniest taste. More is coming.

So, we're going to have our grid modernization, that's part of our continuing thematic of trying to figure out how to stop the end of the world. This is all part of that global climate change bigger picture, and I think the grid is going to be a big part of it. Then we're going to do the two bills, Senator Zwicker and Senator Diegnan's bill, and Assemblyman Karabinchak's bill. And, then, we're going to have a discussion-only on the PFAS -- Senator Greenstein's PFAS bill -- especially after the hundreds of millions of dollars that were just settled on the courthouse steps with this Stewart, Florida, case. So, really, really interesting stuff.

So, that being said, we have a number of speakers to talk about the grid -- actually, we have panels. So, our first panel-- Oh, and by the way, should we take our roll? What a concept.

Let's take a roll call on who is present.

MR. HANSEN: Senator Durr.

SENATOR DURR: Here.

MR. HANSEN: Senator Stanfield.

SENATOR STANFIELD: Here.

MR. HANSEN: Senator Singleton is going to be filling in, but he's not here yet.

Senator Greenstein.

SENATOR LINDA R. GREENSTEIN (Co-Chair): Here.

MR. HANSEN: And, Chairman Smith.

SENATOR SMITH: And, I am also present.

So, we have a couple panels coming up. First panel will be Abe Silverman, Director of Non Technical Barriers Program, Center on Global Energy Policy, Columbia University, and who also has the distinction of having been a very significant part of the policymaking at the New Jersey Board of Public Utilities.

So, Abe, are you here?

UNIDENTIFIED SPEAKER: (indiscernible)

SENATOR SMITH: What's that? You are here? Come on up.

And, let me put it right to you: Our grid, in New Jersey, when are we ever going to get to 100% renewable? I hope the answer is 2035, but the grid, I think, is our biggest problem -- but maybe not.

So, take it away.

A B R A H A M S I L V E R M A N: All right, great, thank you.

Good morning, Mr. Chairman, and members of the Committee. My name is Abraham Silverman. I lead the Non Technical Barriers to the Clean Energy Transition Program at Columbia University, Center on Global Energy Policy.

I often get asked, "What is a non-technical barrier?" And, it's things like interconnection, and grid modernization, and how do we make all

these various things that we need to do to meet our clean energy targets a reality in a timeframe that meets the challenge of climate change.

Previously, I had the great honor of serving as General Council and Executive Policy Council at the New Jersey Board of Public Utilities, working with President Fiordaliso and his wonderful team there. However, my comments today represent my own views.

So, I am going to talk this morning about how we can affordably modernize New Jersey's electric grid -- and, in particular, efficiently connect new resources to the grid. My testimony this morning is going to cover three main topics: First is everything you wanted to know but were afraid to ask about what is interconnection; what does it mean to connect a generator to the grid, how does that process work; the second is why it matters; and, the third is what can we do about it to make it better, more efficient, and cheaper.

So, interconnection, just generally, is the process of interconnecting a new electric generator to the grid. This is true whether you're talking about a nuclear plant or a rooftop solar plant, or a battery, or anything else. If you take nothing else from today's hearing, remember interconnection is about ensuring that you can plug in your generator to the grid in a way that is safe and reliable.

The interconnection process can either be a very short, straightforward process with something like a one-page application for your typical rooftop solar system, or it could be a process that takes months and months and sometimes even years of study involving detailed power flow analyses; looking at the conditions on the grid in various weather conditions; and making sure that the grid can handle the output from the generating unit. Generally, the complexity of the interconnection process depends on three

different things: One is the size and location of the new generating facility -- Is it a small facility? Is it a big facility? -- the size of the utility line that the generator is connecting to.

Typically, if you are connecting a very large generator to a small distribution line, that's not going to work, and vice versa. So, there's a lot of locational aspects to the interconnection process. And, then, you study those parameters under a variety of different load conditions -- how, whether it's a hot day or a cold day -- and you look over the course of a year and say, "Is there a way in which this generator could operate that would be inconsistent with the safe and reliable operation of the grid?" So, once you get your authority to interconnect, you are then free to move about the cabin and sell power to the grid; take power from the grid; and do all those things.

So, the study-- The interconnection process is actually set forth in rules and in tariffs. And, the utilities are required to conduct the studies on a non-discriminatory basis, usually first in time sort of thing. So, you study the first generator in line, and then you move the line and study subsequent generators, and look at the aggregate impacts to the grid.

Now, let me turn to two other pieces of the interconnection puzzle that I think people sometimes find confusing. One, is there is a very important jurisdictional divide that really goes to the heart of this Committee's work on interconnection. So, interconnection to the distribution system -- those are lower voltage lines that power our homes and businesses -- are subject to State jurisdiction, and are established by rules by the Board of Public Utilities, and then implemented by our public utility -- our state public utilities.

Interconnection to the transmission system -- those are the high-voltage power lines -- are actually under Federal jurisdiction, and the studies are conducted by PJM Interconnection, who I know you're going to hear from earlier today, in concert with the transmission-owning utility. So, that's a joint interconnection process for them.

The second thing I want to make clear is that interconnection actually covers -- is a term that means two different things. There's the generator interconnection process we're talking about right now, which is connecting to new supply resources, but there's also load interconnections. And, I sometimes think people get confused when they hear these two terms bandied about, and it's very important to distinguish which one you're talking about. So, if you have a load interconnection, that's going to cover a new consumption resource hooking up to the grid. That could be anything from a house to a large data center that's using a ton of electricity; or to a battery storage resource that is acting both as a load and as a generating facility.

While these are all separate processes, at the end of the day, there is only one grid, and cost-effective grid-modernization strategies need to look at building out the grid both to meet your supply-and-demand objectives, including electrification of the transportation and building sectors, if that's the way the State continues to go, in terms of its policy. I think we all know intuitively, the last thing on Earth you want is for the utility to dig up the street one day to connect a generator, and then come back the next day to connect a new large consumer of electricity.

So, let me talk-- Let me now move to some of the challenges and how I think we can do interconnection better in the state. So, let me start

with the perspective on sort of the national scale first, which is, we have enough power generation seeking to interconnect in this country to replace every generator in the country and then some. So, we have 2,000 gigawatts of generation -- 90% of it clean -- that is currently stuck in an interconnection queue somewhere in the country. Now, you can't quite say that that's going to replace everything that exists currently -- it doesn't work that way, it's a much more complicated question, but this is really a good-news-bad-news scenario in the sense that the bad news is that we're seeing extensive delays caused by all this new generation coming onto the grid; but, I don't want to lose sight of the good news either, which is that we have incredible demand for clean energy in this country. Corporate demand, State clean energy programs, customers wanting to put solar on their roof -- all of these are contributing to what has become a rather significant backlog of interconnection requests.

You know, it used to be you could get a project through the interconnection queue in something around two years, if you were dealing at the PJM level -- much shorter if you were at the State level. However, we are seeing a significant degradation in those timelines over the past couple years, where it's now taking three, four, or even five years to get a project through the interconnection process. And, that's before you even start building out the upgrades.

So, let's talk about how we can solve these challenges. Like any sort of business challenge, it's about the money and it's about planning. And, so, the two things that really-- We spend a lot of time thinking about -- especially in my new role -- looking at these non-technical barriers, is how can we plan the grid in advance and say, "We know that, say, in the A service

territory where there's good land, there's a lot of economic development, a lot of desire to put solar there, yet the utility grid isn't ready for either the demand or the supply side." And, we need to make really substantial upgrades to the system. So, on the planning side, what you want to do is you want to think about where you expect the resources to be in the next five years, and then start planning out the grid to meet those demands.

Developers I talked to are very concerned about this process. In fact, I think it has moved up on the list to be one of the primary considerations for new generation resources. It's about the cost, it's about the timeline, and it's about the uncertainty in the cost and the timeline. If you can come in and know that your cost is going to be $1,000, you can plan that, you can look at your project economics, and you can say, "Yep, this project works or it doesn't." However, the current system is you don't get that $1,000 estimate until fairly far down the line when you've had to invest a lot of money in procuring land and planning your generation facility.

The concerns over timeline apply to both how long it takes to complete the studies, as well as how long it takes the utilities to procure and install necessary equipment. And, we have seen some real problems with supply chain, both on the solar side and the utility side, in procuring things like transformers, which, again, is adding to the uncertainty and delay of the interconnection process.

So, one of the most significant steps we can take, as I mentioned, to accelerate the interconnection process, is to proactively build out the grid. That is the planning side, right -- I think anybody who is familiar with business does this all the time: You look at the addressable market; you look at where your customers are; you look at what they're going to want from

you in the next couple years; and you set up your business to meet that demand. That, historically -- as I'm sure this will come as a shock to everyone -- is not the way that utilities typically operate. Instead, they wait for *you* to come to *them*, and say, "I want to hook up a given generator to the grid," and then they start the whole study process. And, we just simply do not have the grid that's ready to meet those demands. And, the consequence is a real slowdown of our clean energy targets and, frankly, a loss of green jobs in the state.

So, the other side of the equation is the money side. One of the major issues around interconnection is who pays for the upgrades to the electric grid. Historically, when we were in a fossil fuel-dominated world, the resource was assigned -- the new generation resource -- was assigned 100% of the costs of the interconnection. We call this "participant funding." So, the person causing -- the cost causer -- pays to upgrade the grid. The benefit of the participant-funding model is that the cost causer pays, and ratepayers are largely insulated from the financial impacts of that generator operating on the grid to get the benefit of new power, but they don't end up paying for the grid upgrades.

That model has some real severe drawbacks, however. First, the participant-funding model assumes the individual generators will be the primary means of funding utility system expansion. And, as we look into the future and we see the need for significantly more utility expansion than we have in the past -- if you remember, the New Jersey Energy Master Plan from 2019 talked about three times as much electricity flowing over the same system by 2050 -- so we need to substantially upgrade the system, and it's

not clear that we'll get there if we rely exclusively on a participant-funding kind of model.

Second, the costs of interconnection are not knowable in advance, as I mentioned, and so the participant funding methodology increases the risk. And, remember, that development spend; that developer coming in and making an investment early on in the process -- that's expensive capital. That's hard-to-find capital, and we make it very risky because of the long delays in the interconnection process.

Third, under the participant funding model, the utility is required to do detailed studies and really allocate, to the penny, all the various costs associated with interconnection. So, a revised cost-allocation methodology could lessen the complexity and minimize the number of re-studies.

So, let me just conclude by suggesting a couple things the Committee may want to look at. And, I know the Board of Public Utilities is already actually looking at several of these ideas, but let me sort of present them in the most radical to the least radical.

One option would be to simply socialize the cost of building out the system to meet anticipated clean energy demand over the next decade *with* -- and I think this is important -- stringent oversight by the Board over utilities to make sure they are not overspending, and that generators are not locating in places where the costs are going to be so excessive to the benefits to the grid. So, that's one option: Simply take those costs, build out the grid, and assign it to ratepayers as a rolled-in cost.

SENATOR SMITH: Any idea of the cost?

MR. SILVERMAN: You know, we see lots of different estimates on this, sir, and it's very difficult to know for sure. Grid-modernization proceedings that the Board has is looking at this, but you really need to do it in a smart way, because one of the real questions, any time you're doing a grid-modernization proceeding, is how does it interact with other initiatives of the State?

For example -- let me give you a really clear example -- if you are successful on your deployment of energy efficiency, and you are reducing the total amount of electricity being consumed on the grid, that decreases the whole cost of the interconnection program. So, there's a real feedback loop there.

Another example is on something like medium and heavy-duty vehicle charging. If you have chargers coming in and a lot of additional load coming out on the hottest day of the year, where you're having to build out the grid to meet that demand, that imposes a lot of costs. However, if you do engage in a managed-charging program where you're having the charging take place in off-peak periods, that can actually lower total rates even though the amount of electricity being consumed is higher.

So, you know, we see all sorts of estimates. I think California recently came out with some very inflated numbers, talking about a lot of money. However, I think the demand side piece of this all has to be part of the same discussion. But, you're definitely talking in the 10s to 100s of millions of dollars -- I mean, it's not a cheap process -- if not more.

So, that's one option, simply to socialize those costs. The second option is to deal with the unpredictability and variability of the cost. So, you could, say, apply a fixed fee on a per-megawatt-of-installed-capacity basis -- I,

as a developer, have a 10-megawatt project. The fee is $10,000 per megawatt; I pay $100,000 no matter what the studies come back with. That is a way of bringing some additional predictability to the interconnection process so that I, as a developer, know that my costs are manageable. And, you can do that either on a revenue neutral basis where you simply total the -- total cost of the upgrades divided by the number of generators, and every generator pays that amount. Or, you could have some level of cost socialization in there. And, I think that's a very common-sense way of moving towards a more reasonable allocation of these costs and bringing, again, that predictability that developers need to be able to invest in our State.

The third option -- I think this is another one that is absolutely, probably, best practices across the country -- is to direct utilities to establish a list of the limiting elements on their system. So, that's the most congested portion of their electric grid, and then to have them proactively upgrade those elements. Because one of the things we often see is you have a generator coming in, they have a limited amount of upgrades right at their point of interconnection, where they connect to the grid, and that makes sense, and those are manageable. But, then upstream, perhaps two or three or four transmission lines or distribution lines away, you run into a really major upgrade that's going to cost, say, $20 million. No individual generator can afford that, and yet we see a lot of these same constraints popping up over and over again as reasons why projects are delayed or reasons why projects fail. So, you can have the utility address some of those sort of big constraints upfront. And, that's a very successful way, and we've seen that work in a variety of different places -- most famously in Texas, where they built out their entire system, built out their entire transmission system to interconnect

renewables in West Texas with the major load centers in the east. And, that turned out to be an incredibly cost-effective and smart investment for Texas.

So, I very much appreciate the opportunity to testify before you today, and I'm happy to take any additional questions.

SENATOR SMITH: Are you going to give us a copy of your testimony?

MR. SILVERMAN: Yes, I sent it in, absolutely.

SENATOR SMITH: So, you're no longer working for the Board of Public Utilities, so you can tell us the truth--

MR. SILVERMAN: (laughter)

SENATOR SMITH: --in the thematic of conspiracy theories.

The last suggestion of -- I think it was a mix and match of some socialization, some private. Isn't the problem here that we have to make the decision? I mean, you have everybody sitting in their chair looking at each other saying, "Who is going to make the decision?"

So, if you were the king, is that the method you would select?

MR. SILVERMAN: Yes, I would socialize the cost, and I'll tell you why.

SENATOR SMITH: But still have private party -- some participation?

MR. SILVERMAN: I would have very stringent controls, because what you don't want is to remove the economic and setup for the private party to locate at a smart place on the grid.

They may save themselves 10 bucks, but if it causes $100 million of transmission upgrades, that's not a good investment for consumers. So,

we need to have very stringent limits and say, "We will pay up to a certain amount."

SENATOR SMITH: So, who is the entity that needs to put together their master plan for the grid and then enforce it? BPU?

MR. SILVERMAN: If the BPU, yes, and requiring the utilities to come in and make plans that talk about individual grid modernization.

SENATOR SMITH: Are they doing that now? Looking at the whole grid and deciding where?

MR. SILVERMAN: Yes, they are, in varying degrees. So, it's a long process, and I know no one ever likes to hear that answer, but it's -- you really need to think about this in terms of steps. So, the first step is we can deal with these cost-allocation issues because it doesn't fundamentally change what the utility is doing.

And, I have to say, particularly in a world where most new generation in New Jersey is getting a renewable energy incentive, we are already paying on a socialized basis for these upgrades. We're simply paying for it through ORECS and SRECS and then it's getting transferred over to the utility participant-funding model. But, those costs are absolutely showing up on our bill.

So, one of the things we do is we can say, "OK, utility, you plan the system, you know where these resources are coming in, you proactively do that, and then you collect the costs on a socialized basis. We will see enormous economies of scale, and the whole process will be cheaper in the end."

And, so, as we think about the cost-allocation piece, that can go first. This is why I think it's really important that the Board and this

Committee fix the generator interconnection piece first, so we know what we're working with. And, then, as we come in and have more intensive grid-modernization plans -- which are very complicated to do, and are going to take additional time -- you could have that process going on in parallel with fixing the cost allocation. Because one of the major problems we see -- and I've seen this in other states -- is where you give the utilities carte blanche to come in with a grid-modernization plan -- and, I'm sure they will enjoy responding to this comment earlier -- I think there's a perception that the answer is always poles and wires, and that's not necessarily what we need more of. We definitely need some more poles and wires, but that can't be the entirety of the grid-modernization approach.

And, so, I think what the Board is really doing is very deliberately setting up a program for that type of grid modernization in the future, and then thinking about, in fact, there's a nine-point plan, which is part of the Board's grid-modernization proposal where they talk about the first four steps are the ones we're going to implement first, and that includes interconnection, and then there's another suite of ideas that would get addressed further into the future. And, I think it's just a matter of accelerating that process as much as we possibly can, and fixing things along the way.

SENATOR SMITH: All right, does that require legislation?

MR. SILVERMAN: I think there are a couple places where legislation could be helpful. I think the Board has the authority to do a lot of this cost-allocation reform. However, getting the legislature to affirm that is never bad.

I also think that there are various places where distribution grid upgrades -- both because of new consumption of energy or new production of energy -- are going to get cause to meet these State public policies, and it makes some sense to give the Board additional authority there. A classic example is, what did we do about medium- and heavy-duty electric vehicle -- vehicle electrification? Those are going to be large consumers of electricity. I think they have definite public health benefits; I think they have economic benefits to the State. But the cost of building that infrastructure could be substantial. So, that's another example of a place where having the Board have explicit authority to make smart investments. Using ratepayer money could be very, very helpful.

SENATOR SMITH: Do you have any opinion on whether the State would be well-advised to use some of its bulging surplus at this particular moment for the investment in the grid, therefore not requiring that socialization -- at least for that portion?

MR. SILVERMAN: Absolutely. I mean, you know, any money is good money, and I think if you had the utilities come in and each of them tell us what are the top 10 pieces of equipment that you have on your grid that are outdated, about to fail, or limiting the clean energy transition, and we're going to give you a one-time infusion of money, I think that could be very exciting.

Now, there are some implementation details because utilities, of course, are -- they make money based on their rate base. And, so, really probably what you would be doing is, if you had additional money, do something like the Societal Benefits Fund, money that's being diverted, give that back to the Board and have the Board issue it as an offset to bills such

that it's revenue-neutral for consumers, but still respects the utility business model.

SENATOR SMITH: OK, that's--

MR. SILVERMAN: A convoluted answer, but I think it's an important aspect of this.

SENATOR SMITH: I'd appreciate if you put your idea on what the best thing we can do to get our grid modernized -- send it to us. Especially the stuff that you think needs to be in the legislation.

MR. SILVERMAN: I'd be delighted to do that.

SENATOR SMITH: OK.

Thank you, Abe.

MR. SILVERMAN: Thank you.

SENATOR SMITH: I wish you good luck in your new role.

Any questions for Abe? (no response)

If not, then our next panel is Bob Brabston-- Oh, I'm sorry, was there a question?

SENATOR DURR: I can't take when it says the socialization, putting that on taxpayers. I think if we have the money to upgrade our grid system, we should look to that before we look to the taxpayer.

SENATOR SMITH: I don't know that you're not absolutely correct.

SENATOR DURR: And--

SENATOR SMITH: But, we're going to find out. That's why we're having these hearings--

SENATOR DURR: --it's clear statistical proof that nuclear is the way we need to be going.

SENATOR SMITH: Another good discussion.

I appreciate the comments.

SENATOR DURR: It's a proven fact.

SENATOR SMITH: Panel Number 2: Bob Brabston, Executive Director of the Board of Public Utilities; Chance Lykins, Director of Government Affairs, the Board of Public Utilities.

Now, as you're walking up, I want you to calm your anger at Abe, who used to be a member of the team but is now saying, "We need to change the way we think about interconnections." So, don't pick on Abe, all right?

Who would like to go first?

C H A N C E L Y K I N S: Thank you, Chairman.

I'll start us off, and I'll ask the Committee to bear with me. I know--

SENATOR SMITH: No reading.

(laughter)

MR. LYKINS: This is a very technical issue, and so I am going to lean on my reading a little more than I normally do, and so I'll ask you to bear with me on that.

But thank you, Chairman, for giving us the opportunity to be here. Thank you members of the Committee.

My name is Chance Lykins, as you said, Director of Government Affairs for the Board. And, with me is Bob Brabston, our Executive Director.

As Abe always likes to say, "The best time to invest in your infrastructure is 10 years ago." That's as true with utilities as it is with roads, bridges; these are tough choices that have to be made because they do cost a lot of money. This administration, under Governor Murphy's leadership, is

making those choices, and the Board is leading the way through our grid-modernization proceeding.

We brought on a consultant in 2021 who has developed a report. That report has led to nine -- I should say, I told you I should be reading.

SENATOR SMITH: You're doing good.

MR. LYKINS: Nine recommendations that we are slowly -- as quickly as possible, I should say -- in the process of implementing.

Strategically modernizing the electric grid is necessary in order to meet the State's clean energy goals and to enhance reliability. Effectively bridging a significant amount of clean, new energy resources online requires installations to have access to the grid. The New Jersey power grid was designed to meet the needs of the past -- we now have to design the grid to meet the needs of our future.

While the electricity load in the long-term is expected to grow as decarbonization and electrification efforts ramp up, the load growth has flattened currently, and technology enabling remaining loads to be able to coordinate with increasingly local generation -- such that the distribution grid -- must adapt to maintain its balance and evolve a much higher level of flexibility. Further, the grid itself is impacted by an increasing frequency of severe weather events, and even what we saw yesterday with the smoke; we are constantly dealing with new threats, and a lot of that places additional stress on the grid. And, so, these changes are absolutely necessary not just to meet our clean energy needs, but to ensure a reliability for the future.

So, as I said, we've brought on Guidehouse, Inc., a consultant, in 2021 to help develop a report and to help us figure out how best to reform how we handle grid upgrades and how we make this process smoother.

SENATOR SMITH: Have they finished? You have the nine recommendations.

MR. LYKINS: So, we are still -- they are still -- we extended their contract, we are still working with Guidehouse, but they did finish the initial report. That went out for public comment, as with everything we do, we use extensive stakeholder feedback to help guide us in developing our policies. And, so, the initial report came back, it had the nine recommendations in it, and I'm going to read through those and I'll read them quickly, understanding time.

So, those are broken into four near-term recommendations and five kind of longer-term recommendations that are going to take a lot more effort and thinking to puzzle through.

So, the near-term recommendations included to ensure that we are aligned with the latest grid interconnection standards, just making sure we are guarding against obsolescence in the future; streamlining and automating the interconnection application process to the greatest extent possible; including an interconnection dispute-resolution process; and providing consistency across the state's electric distribution companies, providing predictability and efficiency; enhancing hosting capacity methodology; hosting capacity and mapping data; minimum update intervals; and presentation consistency. This would include the electric distribution companies providing a uniform cost data guide for system upgrades -- again, transparency and predictability. And, the fourth in the near-term was designing and implementing an EDC pre-application process in accordance with BPU requirements, which will provide the opportunity to expedite renewables and storage interconnection.

SENATOR SMITH: Have we made any progress on these four recommendations?

MR. LYKINS: Yes. So, the Board -- in the Board order where they accepted this report, they asked staff to begin immediately implementing these first four and drafting rules to implement these first four. And, so, those are, again, the near-term goals that we think we can implement pretty quickly. We're still ensuring that we get as much feedback as we can from stakeholders. Obviously, the utilities are a major partner in this, we can't do this without them, and so we're working hand-in-hand with them as well as to various other stakeholders who have a role in this, whether that's companies providing different types of clean energy, or just different groups that benefit from that.

So, our stakeholder process is robust and thorough. We have a lot of meetings; we take that feedback very seriously; and we use that to guide us through.

Now, the five long-term recommendations: First is that we develop a steering committee and convene working groups and taskforces to further reform the interconnection and grid-mod process. These working groups should recommend tools and an approach for a regulatory sandbox to test or -- to test for new technologies. And, what I mean by that is similar to a pilot program, but we're going to design a way to quickly test and implement new technologies and new ideas to see if they work or if they don't. We're going to put some funding out there, let the private industry or the utilities come to us with ideas; have a way to quickly test those and see if they're working and if worth moving forward with. And, if not, then moving

onto the next idea. But we want to streamline that process so that we can do this quickly and react to changes in the market.

Next, again, informed by our stakeholder process and initiated by the Board, we're asking that EDC should implement a streamlined, flexible queue process across the EDCs, which would include a mechanism to prioritize a "first ready, first (indiscernible)" approach. And, of course, when I say EDCs I'm talking about the electric distribution companies. We love our acronyms at the Board, so, apologize for that.

Third, the BPU should establish a steering committee and working groups to research and recommend additional cost-recovery options beyond the legacy cost-causer approach, under which the resource connecting to the grid is responsible for the cost of the needed system upgrades. And, Abe referred to this. You know, our legacy model has been if you want the upgrade, you pay for it. That worked in the past; that's not going to work for us to meet our needs for the future. And, so, we're looking at different ways to pay for this, frankly, and trying to figure out--

SENATOR SMITH: Well, you heard his suggestion: Take the money from societal benefits, or, and I'll throw out the idea, take some money from our surplus. Does the Board have any idea how much money we're talking about?

MR. LYKINS: No, that's one of the things we're working through, and that's why -- as he said, and I'll agree with Abe -- this is not something we can do overnight, and that's why we've--

SENATOR SMITH: I don't know how many nights we have left.

MR. LYKINS: Understood, and agree. And, the staff at the BPU are all -- the folks in the Division of Clean Energy work tirelessly because they agree with you 100%.

And, regardless of that, we still have to ensure that we do this in the way that makes the most sense, because making mistakes that have to be fixed later down the road can cost us more time. And, so, ensuring we do this in a cost-efficient way, but also in a way that allows us to maximize private investment so that it doesn't all go onto the ratepayer. It's going to take some time, and it takes working through. And, that's why we've developed these working groups to figure these things out.

The eighth recommendation was to direct the EDCs to develop integrated distribution plans, per the energy master plan, and to provide -- for us to provide direction to the EDCs regarding information to be included as minimum filing requirements in their IDPs. And, basically, we know historically what their integrated distribution plans look like, but we're asking them to think outside of the box, to look at the problems we face, and they know as well as anybody where we need to get to. And, so, we have to come up with new plans on how we get there. And, Abe referred to the poles and wires, and that's, historically, how we've invested in our system. And, some of that is going to still be required, but we have to look at other ways of investing in a system; other ways of allowing new technologies to come in and benefit the people of New Jersey.

And, then, finally, the Board would develop rules for separate metering of non-renewable fuel sources that does not allow combined net metering. This will allow renewable generation owners to receive full credit

without penalty, for co-location, non-renewable sources, and without sacrificing resource sufficiency.

So, the Board accepted the report, they directed staff to begin implementing those first four, and then the final five, we are putting those work groups together, we are recruiting the best and brightest to fill out those work groups and to be a part of this. We are imploring the people in this room -- or some of those people -- to get involved and help us figure out these problems. These are huge problems that have to be overcome, and it is going to require the best and brightest that we have to figure out how to resolve them. And, so, these working groups are going to be very fundamental to that.

Sorry, I'm trying not to read, Chairman.

SENATOR SMITH: You're doing real good.

MR. LYKINS: So, the grid-mod program aims to introduce through these collective role changes in a more cost-effective and balanced method for rapidly expanding our distribution grid and DER-hosting capacity through several innovative and coordinated efforts, requiring the EDCs to develop and file highly proactive and adaptive integrated plans, as we discussed, that will enable a more rational and streamlined attachment, fuller utilization, and fair compensation of privately invested DER resources -- distributed energy resources -- recognizing and enabling the potential for aggregated distributed energy resources under the coming FERC 2222 order, driven PJM -- which is driving PJM tariff by standardizing these under-grid flexibility services, architecture, and future tariff.

Realizing that distribution grid upgrades might be more broadly implemented through more rigorous cost estimation, allocation, and

recovery, and better recognition of ratepayer benefits that may help justify socialization of some of the cost elements. As Abe said, we need to have a hybrid method on how we pay for all this.

And, then, align and better integrating grid impact studies to include both load and generation together, and allowing export limiting and other smart grid-control mechanisms to factor into approvals.

So, with that, I will thank you for allowing us to take part here today. I will say happy belated birthday to Vice Chair Greenstein, and we welcome any questions the Committee has.

SENATOR SMITH: It's not a question, it's a directive.

We need it yesterday. Abe's comment about the best investment was 10 years ago -- walk outside the building. We're in trouble, and it's getting worse every second.

So, I don't know whether you need to hire more staff, or maybe we need some of the smartest energy companies in the state to volunteer staff, but we can't wait much longer. So -- not that I want to put the 800-pound gorilla just on the BPU's back, we're all at fault -- but we've got to get this stuff moving.

MR. LYKINS: No, and that's a good point; this is an all-government approach that we have to take, and we are working with the other agencies as well as the private sector and the regulated sector to find these approaches.

We're not waiting on anyone. But, again, these are long-term complex problems--

SENATOR SMITH: No question--

MR. LYKINS: --and, it's going to take, unfortunately, long-term solutions to make sure we get there and get there--

SENATOR SMITH: Right, but we also, I think, have to change the way we think, somewhat. The model has always been private development; let them go through this process. It's taking too long.

MR. LYKINS: You get no disagreement from me, Chairman.

And, you know, obviously, you've pushed us with a lot of legislation that has helped us implement a lot of new--

SENATOR SMITH: Tell us what else you need--

MR. LYKINS: --laws that have been great.

SENATOR SMITH: Do you need any other legislation? Tell us.

MR. LYKINS: Well, and again, that's what-- And, I know-- Look, I hear you. We are running out of time, and everyone at the Board agrees with that.

SENATOR SMITH: OK.

MR. LYKINS: But, we still need to go through the process and study these issues on how best to get to the solution so that we don't -- we can't just keep throwing things at the wall; we've got to figure out the best way to do it.

We are moving, and we are moving quickly.

SENATOR SMITH: All right.

MR. LYKINS: And, we--

SENATOR SMITH: Now, is Bob just arm candy here, or is he going to say something?

MR. LYKINS: (laughter)

He's going to answer the questions if you have technical questions.

SENATOR SMITH: Any questions for the Board of Public Utilities?

SENATOR DURR: I don't have a question for the Board, but I did want to comment on what you just said about, it's obvious.

Actually, I think what we're experiencing with the smoke is a proof that we don't control our own air. We're getting smoke from Canada, so--

SENATOR SMITH: And, a little from New Jersey. We have 5,000 acres burned down--

SENATOR DURR: I think there's going to have to be a united front. So, to say that we have control over what takes place in New Jersey is proof fact of right now.

SENATOR SMITH: I honestly don't get the same conclusions you do, but it's OK; we can disagree.

Thank you for coming.

SENATOR DURR: I did want to say one thing.

I might have missed the count. You had nine, but I heard you say three, and then you went to eight, nine, so I think you kind of missed four, five, six, and seven.

SENATOR SMITH: The good thing about having written testimony is you can give us a copy and we can share it.

MR. LYKINS: Yes, and you do have a copy.

I read all nine, but I may have miscounted as I was going through them.

SENATOR DURR: OK.

MR. LYKINS: Lesson for the future, use numbers, not bullet points.

And, I will say, to your point, Senator, you're right. There are a lot of things outside of New Jersey that we cannot control. But, we have to do the things we can control, and we have to set an example and lead by example. Somebody has to lead.

SENATOR DURR: I don't disagree with that. I do think we need to do something, and it has to be done yesterday. But, I don't think in today's society we need to look at the taxpayers to do it. I think we are sitting on a boatload of money, the government should pony up.

SENATOR SMITH: Right. Which, by the way, is ultimately taxpayers' money as well. But, I don't disagree with you. That whole question -- if we were flush with money, maybe the grid should be one of our top priorities.

In any case, thank you, gentlemen, for coming in.

Our third panel is Asim Haque, from PJM Interconnections. PJM is the source of all of our problems on this, so let's greet Asim with great affection.

Asim, what is PJM doing to help us get out of jail here?

A S I M Z. H A Q U E: Chair Smith, Vice Chair Greenstein, members of the Committee, good morning.

Well, with that hearty introduction, I am happy to be here representing PJM Interconnection. PJM is the regional grid operator that runs the bulk electric system for 13 states and the District of Columbia, including the entirety of the State of New Jersey.

We have testimony that we have provided to you -- it's got the blue cover. I will give you the CliffsNotes version of that testimony, but there are some diagrams in that testimony that you might find to be interesting as we progress through our discussion of my testimony.

So, PJM -- again, regional grid operator that operates at the bulk electric system level. And, I know many of you already know this, but electricity delivery generally consists of three components: The generation of a watt; the transmission of that watt across high-voltage transmission lines; that watt then goes to a distribution substation where it is then taken by distribution utilities and pushed to consumers, residents, and businesses in the State of New Jersey. That action is regulated by the New Jersey Board of Public Utilities, and they regulate distribution utilities -- who I believe are here today, who you'll hear from.

So, we operate purely at the bulk level. So, the generation of a watt, and the high-voltage transmission of that watt, and reliability and affordability have been the cornerstones of PJM for many, many years now. We started, actually, in 1927 as a power pool and our mission continues to be reliability and affordability, although you will see that, certainly, our strategy has evolved to meet the times. And, the times that we are dealing with are -- as has been discussed earlier today -- a number of State and Federal decarbonization policies that have been advancing, that we want to try and help to facilitate-- Why an entity like PJM.

So, first and foremost, electrons don't know state boundaries, so they cross a high-voltage transmission system that is interstate in nature, and by the use of regionality. So, states able to share in the cost of the development of transmission facilities, we are able to save consumers' money.

And, so, at the end of the day, our value proposition at PJM through both reliable delivery of power as well as this concept of pooling resources together saves consumers roughly $3.2 to $4 billion annually--

SENATOR SMITH: Yes, but what if it results in them burning to death or having massive floods?

MR. HAQUE: I think that is a very fair question, Chairman, and I want to get into that. We are-- One more item, and I will address that question directly.

PJM is a public utility that is regulated by the Federal Energy Regulatory Commission, under the Federal Power Act. Our framework is effectively as a nonprofit; we are mission-driven with pre-determined rates, and those pre-determined rates do not allow for PJM to retain earnings. So, we are unlike a typical "public utility" in that we don't have shared prices; we don't have quarterly earnings calls; we're not beholden to shareholders; etc.

Now, specifically to your question around decarbonization: Well, reliability and affordability have been the cornerstones of the PJM mission for a long time. A few years ago, we adopted a five-year strategy. The first pillar of that five-year strategy is to facilitate State and Federal decarbonization policies reliably and cost-effectively. So, that is a major, major item on PJM's radar right now, and is part of our strategic effort going forward. We have taken great strides to advance that particular pillar of our policy since we adopted this five-year strategy.

We're going to talk about interconnection. We have, actually, undertaken a pretty exhaustive process to reform the interconnection process, which we'll spend some time talking about. We are currently-- And, we enjoy a really strong relationship with New Jersey Board of Public Utilities. It is a

top-notch agency with top-notch professionals; you have heard from them already today, and we'll call them veterans of the BPU. And, Mr. Silverman, who has done a remarkable job not only at the BPU but generally speaking, talking to you all about energy policy.

But, we are currently exploring a market mechanism to try and determine if there is a better way to more cost-effectively procure clean resource attributes. There are a series of actions that we have taken to help facilitate State and Federal decarbonization policies -- probably the flagship being the State-agreement approach that was entered into between PJM and New Jersey for the build-out of transmission to support the build-out of offshore wind and meeting offshore wind objectives in the State. Now, PJM continues to be concerned about reliability; you will see in my testimony that we talk about our concerns around the near term, intermediate term, and upcoming reliability concerns. We've spent a lot of time analyzing reliability during the energy transition.

We had a challenging event this last Christmas -- winter storm Elliott -- where today we have enough watts. We have enough watts with what are called "essential reliability services," but our generators did not perform up to the standards that we would expect for them to perform. That's an immediate concern -- near-term concern. If you haven't had the opportunity to read a PJM report, it's called "Energy Transition and PJM Resource Retirements, Replacements, and Risks --" we call it the *Four R Paper*. And, what we effectively say in that report is that we are seeing generation leave the system, projected by the end of this decade at one pace. There is another pace of generation coming onto the system, which is not fast enough -- which we are doing our best to facilitate -- and, you are going to see load

growth across the system due to things like electrification and data centers. When you add all of those up, we have concerns about maintaining adequate supply late into this decade.

The last item is this concept of the central reliability services that are sort of physics and grid-engineering properties, which I'm not smart enough to talk about, but the North American Electric Reliability Corporation is. We will continue to need some mix of our thermal resources -- that's nuclear, coal, and gas -- until a replacement technology is deployable at scale. We cannot run a system -- a reliable power system -- purely on intermittent resources. We are going to need some combination of those thermal resources in order to continue to provide reliable power. And, that is not us saying that; that is the North American Electric Reliability Corporation.

I want to talk about interconnection. Abe brought up a couple concepts that I think I want to make sure to address. Interconnection at the bulk level -- so, we just heard from Chance who talked about interconnection primarily at the distribution level -- let's talk about interconnection at the bulk level. You'll see in my testimony on slide -- excuse me, on Page 5. If you're able to look at Page 5, what you will see is that, as renewable generation development has really soared, the type of new projects has shifted from a limited number of large resources to hundreds of smaller, more disperse renewable energy projects. And, as a result, the number of projects that have entered the PJM queue has significantly increased over the past four years. So, you'll see, the numbers are sort of level at about -- we'll say an average of 400 between 2010 and 2018. In 2019, the projects entering the queue jot up to 709, and then in 2020, 1,028.

So, we recognized that this queue was changing based upon the resources that were entering the queue. So, in October of 2020, we advanced a queue reform process. That process resulted in a proposal that was pretty overwhelmingly supported by stakeholders and approved by the FERC -- again, we are regulated, so it was approved by the FERC in November of 2022. That new proposal -- or, excuse me, that new reform process -- is underway right now. So, the transition -- you also see a particular set of metrics on slide six. So, the transition that is starting right now is expected to process interconnection applications that cumulatively represent 260,000 megawatts worth of resources over the next three years. That's 175% of our peak load.

So, over the next three years, we are going to be studying a substantial, substantial number of renewable -- primarily renewable -- resources that are in our generation interconnection queue. And, that will, in many ways, be an opportunity for a lot of renewable power to find its way to the grid.

Chairman, a concern that PJM Interconnection has right now is that, as we sit here today-- So, we are going to be processing *a lot* of renewable power through the queue over the next few years. As we sit here today, we currently have 44 gigawatts of primarily renewable power that have no more processes left at PJM Interconnection. Meaning, they have signed interconnection service agreements, and we are not seeing those projects come to commercial fruition.

SENATOR SMITH: Because they can't get into our-- First of all, New Jersey projects?

MR. HAQUE: New Jersey projects, I have the statistics for you.

We have 47 projects representing roughly 43-45 megawatts -- so, 4,345 megawatts -- that are outstanding right now. And--

SENATOR SMITH: And, by outstanding, they're connected to the grid.

MR. HAQUE: They are not connected to the grid, but, again, these are bulk power projects. This does not have anything to do with the BPU, as far as I'm aware.

SENATOR SMITH: It's going to go on the grid for everybody -- for all the states

MR. HAQUE: Go on the grid for -- sure. Well, go on the grid for, primarily-- Based upon the transmission system, likely locally first, and then if their power is able to be electrically transmitted to other states, that is also a possibility.

SENATOR SMITH: So, you're saying they can't get on the grid; the interconnection is too big of a problem?

MR. HAQUE: No, no, no, that's not what I'm saying at all.

SENATOR SMITH: OK.

MR. HAQUE: So, these are projects that have made their way through the interconnection queue. They are done with PJM processes; they are done with the queue; but, they have not commercially deployed.

Reasons that we're hearing-- Abe cited a few of them. We are hearing issues related to supply chain; we are hearing issues related to siting; we are hearing issues related to the financing, and we don't deal -- at PJM Interconnection, we don't deal with the sort of financing elements of this. But, we are hearing issues related to that as well.

I think probably a fruitful panel or a fruitful discussion would be to spend some time with some developers to say, "Hey, how can we help alleviate," knowing that 260,000 megawatts of renewable resources are going to find their way through the PJM study process over the next few years; that we currently have 44,000 megawatts of resources, primarily renewable, that *have* found their way through the queue; that are done with PJM processes. Why are these not developing out? I think that's a really good conversation to be had. Developers aren't obligated to tell us why, but these are hearsay, some of the reasons that we're hearing -- again, supply chain, siting, some financial-related issues. There are a few others as well.

But, again, that is the conundrum that we are facing today. Now, that's concerning, then, from PJM's perspective, because if we are going to be pushing resources off of the system with some level of rapidity due to policy or other reasons, and we're not seeing these resources that have found their way through PJM processes connect to the system, you can understand our concerns around maintaining reliability going forward.

OK, the grid of the future: So, we have a few items that are underway that I think are really sort of interesting items that are grid-related. We are obviously spending a lot of time thinking about electrification and electric vehicles. As it relates to demand, we've partnered with some entities to figure out how we can utilize the grid to enable electric vehicles to have the ability to interact with the grid; to maintain reliability; and provide cost efficiency for electric vehicles going forward. In my testimony, you will see that we have discussed items like dynamic line rating; we have discussed items like phasor measurement units.

I wanted to discuss one more item, because I do think that Abe is spot-on with this critique, which is that-- So, there are a couple items, a couple of bulk system items, that can help facilitate the transition. One is reforming the interconnection queue, which, again, the Federal Energy Regulatory Commission has approved. We are now in a position where we can mandate that the developer not only has site control -- has their land -- but also can meet certain financial metrics. And, it's a first ready versus a first in line regime.

So, think about it this way. If you were first in line, PJM engineers -- electrical engineers -- would study that project and everything downstream to make sure that everything electrically fit together. But, maybe that project didn't have its land; maybe that project didn't even have financing -- couldn't show, sort of, financial responsibility, and that project drops out. Now we've got to re-study everything, OK, because the electricity dynamics have changed.

So, now what we do is -- now what we're going to do is -- who is first ready? Meaning, who has got their land, and who has got -- who can show financial capability. And, that will change the dynamics of the backlog, and hopefully streamline things to get things through quicker. And, so, that's just-- The queue has already undertaken reform. There's more to do there, there's certainly more to do there. We're exploring that, we've got a committee that's working on that as well within our stakeholder process, we're exploring that, so that's the queue.

The other item is long-term transmission planning. OK, so, I agree with Abe's critique. Much of our transmission planning, I would say, is sort of action-react, and I think we need to be more proactive in the

transmission planning space. We just announced very recently that we are going to be pushing down the path of advancing a long-term transmission planning regime. This is something that the FERC has been looking at for a couple of years now -- long-term transmission planning. We had been participatory, not only within our stakeholder process but also with the FERC on this subject. The FERC hasn't issued an order on this, but-- So, what does that mean? That means that we are going to try and advance long-term transmission planning based upon the framework that has already been approved by the FERC.

So, we are going to try and go at this with our stakeholders over the next many months. And, so, we are excited to push, to move that process forward. There is a very interesting discussion to be had around the socialization of these costs. There is a very interesting discussion to have. We have 14 jurisdictions -- they all view it very differently.

So, more to come on the cost allocation elements, but, certainly, we can get a long-term transmission planning framework in place; cost allocation TBD.

That's really it for my testimony. I wanted to make sure-- Again, my testimony is nine pages long with some neat diagrams, but I wanted to make sure to be responsive to what the panel was discussing today.

Thanks.

SENATOR SMITH: We do appreciate your participation.

I don't know that I can feel confident that we're in a good spot, but I appreciate the efforts that PJM is making.

Are there any questions from the panel? (no response)

All right, then our-- Thank you for coming in.

Our last panel--

MR. HAQUE: Thank you, Chairman.

SENATOR SMITH: --is Christina Farrell, Vice President of NJUA, which is the Utilities Association for New Jersey; Michael Schmid, Vice President of Asset Management Planning -- PSE&G; Michael Kayes, Managing Director of Transmission, Construction, and Maintenance -- PSE&G; Jim Fakult, President -- Jersey City Power and Light; Doug Mokoid, Region President -- Atlantic City Electric.

Come on up, gentlemen and ladies.

And, Christina, are you introduce--

C H R I S T I N A F A R R E L L: I am. I know there are only a few seats up there (indiscernible)

SENATOR SMITH: Whatever you want to do; we're easy.

Take it away.

MS. FARRELL: Good morning, Chairman, members of the Committee.

My name is Christina Farrell; I am the Vice President with the New Jersey Utilities Association.

NJUA is a statewide trade association for investor-owned utilities that represent the IOUs that provide essential electric, natural gas, telecommunications, water, and wastewater services to your constituents throughout the state.

I appreciate the opportunity to provide brief remarks today before you hear from three of our electric utility members on electric interconnection and grid modernization.

The EDCs are collectively focused on protecting the safety, integrity, and reliability of the electric grid, while facilitating the achievement of the State's ambitious clean energy goals; accommodating customers' growing interest in DERs; and making the interconnection application process more efficient and effective for all parties.

With that in mind, all of the electric utilities that you will hear from today have been active participants in the board stakeholder process on proposed rule changes and interconnection. You'll hear today from JCP&L, Atlantic City Electric, and PSE&G on these things.

And, we just appreciate the opportunity and the invitation on behalf of our electric utility members to participate in today's hearing.

M I C H A E L S C H M I D: Good morning, Chairman Smith, distinguished committee members.

My name is Michael Schmid, and I am the Vice President for PSE&G of Asset Management and Planning. I have with me today Mike KAYES, he's our Managing Director of Tranmission, Construction, and Maintenance.

And, I would like to thank you for the opportunity to discuss our modernizing the grid and integrating more renewable energy, while ensuring reliability as well as affordability. I appreciate the opportunity.

We believe that PSE&G can significantly lower carbon emissions to the state to support the State and Federal goals that are out there. We are all aware of the ones that came out in April of 2021 from the U.S. level that talks about getting 50% below 2005 levels by 2030, as well as achieving a net-zero economy-wide emissions by 2050. We also know about Governor Murphy's new climate goals that speak more about the 100% clean energy

by 2035 and electrification of 400,000 homes and 20,000 commercial properties by 2030, as well as the phase-out of gasoline-powered vehicles by 2035.

All those goals align very closely with PSE&G's *powering progress* vision, and, that vision is simply -- it's just a future where people use less energy; it's cleaner; more reliable; and delivered more safely than ever. And, that's what we do and what we use to guide our work every day, and what we're going to continue to use to guide our work going forward.

Along with that, we're laser-focused on reliability for providing a reliable service to our customers. 2022 was a great year for PSE&G; we've received our Reliability 1 award, which is looked at from -- it's providing outstanding performance in the Mid-Atlantic metropolitan service area for 21 straight years. On top of that, we also received an Edison Award -- the award is the electric utility industry's highest honor, and we received that award specifically for the work we did to protect New Jersey communities and customers from extreme weather events.

But, in order to get to where we know what's coming, we're looking at focusing on three key areas: The first, providing the cleaner energy and fighting climate change; the second is investing in infrastructure that creates a more reliable grid; and then, also, support clean and affordable energy through investments in different programs. So, we're also committed to decarbonizing the transportation sector and, you know, the growing electric vehicle infrastructure is going to help us reduce the leading source of greenhouse gas emissions.

We're also committed to nuclear power. Our nuclear power units produce over 80% of New Jersey's carbon-free energy, and it's the foundation

in New Jersey's supply of carbon-free power. And, with the anticipated increase in electric command, we're committed to simultaneously reducing the overall energy use through energy efficiency and cleaner technologies.

It's clear that this electrification is not going to happen overnight. When you look at the 400,000 homes and the 20,000 commercial properties that were identified in the Governor's executive order by 2030, even if that were to happen, that's only a fraction of what's in our service territory along the PSE&G. So, we have to be pragmatic; we have to focus on strengthening our current infrastructure and making all the necessary investments to achieve that clean energy transition. Over the next five years, we plan to invest $15.5 billion to modernize our system, which is going to help achieve these goals.

The clean energy transmission, it's a two-fold challenge. It requires increased investment in our distribution system so that we can safely and reliably meet the increased demand that's happening with the electric power, whether it be for people's vehicles or heating their homes. And, we also have to look at the shift to non-carbon emitting resources. It's worth noting -- and, you heard a little bit earlier from the other speakers -- that the fossil fuels that are now produced, there's 60% are fossil fuels in PJM's generation. If that doesn't change, then moving towards electrification really will not improve our climate impact, and it also isn't going to get us to that better use of the cleaner energy resources.

So, in anticipation of the load growth that we see coming, as well as from electrification -- our 10-year business plan -- we're looking at upgrading more than 60 substations. That's going to add additional capacity into the system, and that additional capacity is going to allow us to-- And,

what we've looked at is it allows about 845,000 light-duty vehicles to be added into our service territory. And, that's essentially 10 times more than what we currently have today, so just to put it in perspective. And, it's also going to support-- By doing that, it's going to support adding about 1,000 megawatts of distributed energy resources like solar and other things into our system.

But, now we move a little bit more to our resiliency perspective. In the aftermath of Superstorm Sandy, we've raised and rebuilt 48 flood-prone substations through our programs like Energy Strong. And, those upgrades, there's another 20 substations that are underway that will be completed by next year. So, increased reliance on electricity will make the reliability a greater concern for our customers. And, what we recently put together and had approved in 2022 is our Infrastructure Investment Program. And, that program is really specifically designed to go after that last mile distribution investment, to build on that reliability. And, if you think about it, when you look outside and you look at the plant, the outside plant, our poles and wires that you see along the street, some of them are original equipment and some of them are greater than 90 years old.

So, we recognize the long list that we also have to look at it from an affordability perspective, and it's an important consideration. That's why we continue to say that energy efficiency and conservation is a priority -- you heard that from the other speaker -- and that's why PSE&G, our landmark $1 billion energy efficiency program was a great success. Over 2,000 New Jersey residents have been put to work implementing that program, and it is expected to save any of our participating customers over $300 million a year.

Now, I want to just turn it over to Mike Kayes, who is going to speak a little bit more about the issues related to interconnections.

M I C H A E L K A Y E S: Good morning; thank you for the opportunity to speak.

PSE&G is the largest transmission owner in the State of New Jersey. In support of the programs that Michael has spoken about, and, since 2003, we have rebuilt or replaced almost 660 miles of the high-voltage transmission system in the state.

We're continuing to work. The focus is now shifting more towards the 69 KB backbone in this state to be able to provide that resiliency, and increase the capacity that Michael spoke about when it comes to electrification. Additionally, New Jersey is uniquely positioned to be the leader in the offshore industry, in offshore wind. PSE&G was a supporter of this. We were involved with the state agreement approach -- solicitations -- and was awarded the offshore upgrades for some of those upgrades.

This is all dependent upon a wholesale interconnection process that has three key players: You have the developer, which you've heard about before; the transmission owner; and PJM. All three play a critical role in the process. PJM has worked with its stakeholders, including PSE&G, to develop new interconnection rules to help us move forward and make sure that queue is more efficient. The rules are now in place, and they are being implemented, and for PSE&G's part, the company is not contributing to any PJM backlog at the current time for grid-connected solar projects. To be more specific, the backlog-- To be more specific, there are no outstanding studies attributed to PSE&G at this time.

There are four queue requests that are awaiting agreement -- which you heard PJM speak about -- and there are 14 studies that are pending application review and requiring action by other stakeholders. On the transmission planning front, PJM -- they must be able to respond to often diverging State policies, which we see with the energy needs. And, this is challenging because, you heard before, there's 14 states that have different policies, and trying to aggregate that all to make sure that the grid can accept that is a challenge.

So, New Jersey may be like (indiscernible) other states, and we would support those goals of those states. You heard before that PJM is a reasonable planner, and need to engage in a long and robust planning that properly reflects the expected long-term changes to the system. One of the challenges that we see is the retirement of fossil resources, which relies on a 90-day retirement notice window, which is insufficient for planning. So, if a generator wants to retire, all they're required to do is provide 90 days notice to PJM for that -- very challenging when you're looking at the bandwidth on a system and how to actually make sure we can feed the load.

SENATOR SMITH: Is that New Jersey State or is that PJM policy?

MR. KAYES: That's PJM, across the board, PJM -- that's their rule.

PJM's load forecast--

SENATOR SMITH: Is PJM's guy still here?

MR. KAYES: I'm sorry, I couldn't hear you, sir.

SENATOR SMITH: Yes, so you heard that: 90 days is too short. On the notice with the fossil fuel--

UNIDENTIFIED SPEAKER: (indiscernible)

SENATOR SMITH: Please take that back.

MR. KAYES: Thank you.

PJM's load forecast needs to align with that of its states. The recent review shows we have approximately 2,000 megawatts difference between the 2032 outlook for PSE&G -- our 10-year plan and window -- and PJM's load forecast. We are working with PJM to correct this and make sure that we are aligned so that we have proper ability to feed the needs of our customers.

PJM should make necessary steps, which may include market design and reform -- which you're hearing about -- to ensure that states can electrify the energy used, does not come from carbon-intensive generation. So, what Michael talked about before, 60% right now in the PJM footprint still comes from carbon-based--

SENATOR SMITH: Let me ask you a question.

In fact, there are people in the room, or a part of this movement to see that no other natural gas plants are put online; to see the compressor stations are not expanded; a whole bunch of projects all over the state.

Are we ready to turn off the switch on these new facilities? In other words, not have them built? How would either the grid react to that, or the planning that you've done react to it? How would the citizens react to it?

MR. KAYES: I think it goes back to that robust 10-year planning process -- understanding what's going on.

Obviously, it's-- We're all connected when it comes to that generation.

SENATOR SMITH: Right.

MR. KAYES: And, there's not one-- I don't think there's one solution that gets you where you want to be, and all that has to be studied is part of that planning window.

SENATOR SMITH: That's a very Secretary-of-State answer.

MR. KAYES: Let me be a little more specific.

So, we work very closely with PJM. We get their load forecasts, we do our own load forecast as well, so they have -- from a transmission standpoint -- and then we look at it for what's happening at the distribution level.

And, I can get more specific. We have-- And, that's why I referenced the $15.5 billion worth of investments. We are ready for people, and our system is ready to accommodate what we see and what we planned for.

SENATOR SMITH: Again, pretty diplomatic.

The question I'm asking -- because of the way in which you as an elected official looks at things -- if you're going to change the law, are the impacts good, bad, or are they ill-timed?

If we did not allow any further natural gas plants in New Jersey to be erected -- saying, today, the button is switched -- would our system be able to handle it?

MR. KAYES: I don't have the specific answers, and, really, it depends because we may not produce all our energy that we need in New Jersey currently. And, that's a challenge for us. If you made a legislation that impacted New Jersey, you may still import natural gas generation from the

west of us in order to feed our load at the end of the day. That's the reality that we're facing here with this.

So, unfortunately, PSE&G no longer is in that fossil industry. So, we don't-- There are units that are in the State of New Jersey that should run to feed that. But, is there solar and renewables currently on the grid that could meet our need? I would say no.

SENATOR SMITH: Not currently. OK.

Sorry to interrupt.

MR. KAYES: No, it's an interesting point, because we appreciate-- That's what we're here to talk about, right?

And, we appreciate the Office of BPU through its grid modernization. They're pushing for some of this stuff to go on. They've engaged all the electric delivery companies in the state, looking to modernize the process and move forward. The state with BPU shaped the regulatory foundation of New Jersey for the clean energy future. PSE&G will only continue to work with that as we go forward.

Some of the highlights for PSE&G is that we have connected more than 75,000 metered solar installations with a total capacity of 1,750 megawatts. We also have about 200 megawatts of grid-connected solar and service that are under construction at the current time. PSE&G has participated and provides comments as needed to whole sessions of the BPU's recent multi-year grid-modernization effort. We welcome this effort and the opportunity to continue to assist the BPU and create clean energy solutions for New Jersey that contemplate efforts ongoing at PJM and FERC.

We're committed and well-positioned to support the State's goals, and doing our part to build a cleaner future for New Jersey while

keeping energy affordable, highly reliable, and increasingly more efficient. We are committed to accepting the challenge of delivering an even cleaner energy for the future. We take our responsibility of keeping the lights on and the heat on very seriously, and committed to continuing to doing right for further electrifying and decarbonizing our systems to respond to the growing demands of them and transitioning into an energy of the future envisioned by all.

PSE&G remains committed to cooperating and collaborating with the legislative and the Board of Public Utilities, PJM, and other stakeholders in advancing policies that respond to these new challenges. This involves the needs of our customers and retaining a talented and diverse workforce that helps investment reality.

Thank you for the opportunity for participating today.

SENATOR SMITH: Gentlemen.

D O U G M O K O I D: Good morning, Chairman Smith and Committee Members.

My name is Doug Mokoid, Region President for Atlantic City Electric, and I appreciate the opportunity to speak to you today on the future of the electric grid in New Jersey, and Atlantic City Electric's efforts to modernize the grid in southern New Jersey for our 568,000 customers.

Atlantic City Electric is committed to being a critical partner in helping New Jersey advance a clean energy future and meet the goals of the Energy Master Plan. We recognize the grid is a platform that supports this transition. We will continue to make investments in our infrastructure to build a modern, reliable, resilient, and flexible grid that will continue to

accelerate the clean energy transition for our customers and communities while also focusing on affordability and supporting equity in this transition.

In February, we announced that Atlantic City Electric's customers experienced a record service level in 2022. Our investments in infrastructure projects to build a smarter, stronger, and cleaner energy grid resulted in the lowest frequency of customer outages ever. The frequency of outages in 2022 decreased from the previous record low in 2021 by more than 6%, and has improved by over 56% over the past 10 years.

To create and maintain a climate-ready grid, we have made significant operational enhancements and proposed innovative solutions, all of which contribute to a platform for smarter, safer, and more affordable outcomes in the face of climate change. To that end, we focus on several key areas to foster ACE's climate-ready vision.

So, first, ACE envisions a climate-ready grid as being able to host a variety of smart, integrated, distributed energy resources like solar and battery energy storage, as well as integrating large energy systems like offshore wind. Our goal is to make the interconnection of these DERs faster, less expensive, and more transparent. More efficient DER connection will also create grid enhancement efforts as we upgrade and modernize the grid to accommodate new resources. With new connected devices on the system, ACE can create a smarter grid leveraging new IT tools. To that end, ACE's continued deployment of advanced distribution-management systems and distributed energy-resource management systems has foundational elements of a climate-ready grid.

SENATOR SMITH: Doug, let me interrupt you for a second.

What you're telling -- or, what I'm listening to -- sounds 180 degrees from what I've heard about your grid in South Jersey, in the ACE territory. And, I've heard it from the solar developers. They say, "We would like to build a grid-scale solar facility in the ACE territory. There's no capacity; we can't get on the grid."

So, I mean, are you putting lipstick on a pig?

MR. MOKOID: No.

SENATOR SMITH: Or, is this-- What's going on?

MR. MOKOID: I'll jump right to solar, and I'll get into specifics on solar.

So, connecting customers to solar and other clean energy resources is a top priority for ACE. To date, we've helped nearly 50,000 customers out of our 568,000 totaling more than -- connect; adopt solar -- totaling more than 550 megawatts. In fact, solar has experienced such high penetration in ACE's service territory that it now accounts for about 25% of our net peak demand.

We recognize that continuing to sustain solar grid with such a large amount of solar in our system requires ongoing investment and grid modernization. To that end, and to enable solar connections in South Jersey, we recently proposed $33 million in investments to our "Powering the Future" filing to resolve closed feeders, which would pave the way for additional 50,000 new rooftop solar customers.

SENATOR SMITH: Right, is that in front of the BPU now?

MR. MOKOID: Yes.

SENATOR SMITH: And, have they approved it?

MR. MOKOID: It is -- not yet; it's pending.

SENATOR SMITH: OK, when do you expect to have an answer from them?

MR. MOKOID: Shortly.

SENATOR SMITH: OK, is BPU here? (no response)

Everybody wants to say their piece and then leave; they don't want to listen to anybody else.

SENATOR DURR: Chairman.

SENATOR SMITH: Yes.

SENATOR DURR: From my perspective, isn't fossil fuels produce more than 50% of our power? The reliability is required at 91%.

So, how is the offshore wind and the solar going to replace that?

MR. MOKOID: Well, since last year in February, Exelon now -- which is the parent company of Atlantic City Electric--

SENATOR SMITH: Right--

MR. MOKOID: --is a purely transmission and distribution company. We no longer have generation under our portfolio; the company split and that company is a separately traded company -- a consolidation.

But, we envision the clean energy future of a combination of sources that will feed into the grid.

SENATOR DURR: Having a multitude of items on the portfolio, not just one.

MR. MOKOID: Yes, we envision a--

SENATOR DURR: But you agree that nuclear and fossil fuels play an intricate part of our future power?

MR. MOKOID: I would say clean energy resources--

SENATOR DURR: Clean natural gas--

MR. MOKOID: --clean energy resources-- Our role is a connector, and we intake those clean energy resources onto our grid. And, that is our role as we see in the future, as a connector.

SENATOR SMITH: OK, well, what you're saying is -- and, maybe I listened to the wrong people -- is counter to what I've heard in the ACE territory.

MR. MOKOID: I'll be specific.

So, we recognize the challenges. We have such -- again, 50,000 solar connections to date at ACE on our 568,000 total customers.

SENATOR SMITH: You'd like to get credit for some of the good things, I got that.

MR. MOKOID: But, that's a high penetration, right? And, our electric grid -- I'll get into it next -- the closed feeders that we have -- so, there *are* closed feeders on our system; residential customers and large solar developers are unable to connect to our grid.

The closed feeders -- either residential or large scale, can't connect -- are often caused by a substation transformer limitation due to reverse power (indiscernible). In response to that, we've incorporated over-voltage protection into our standard transformer protective relaying package across the ACE system. So, there's a couple of pieces to that that I want to highlight. All newly constructed projects -- when we have new construction -- we utilize the standard going forward. The standard does maintain the safety, reliability, and resiliency of our system, and preventing reverse power flow and when there's high penetration of distributive energy resources present like solar.

By the end of 2023, we will complete work at four of our substations that will open in 11 closed feeders to customers. Combine that with the three feeders that we've already opened -- so, we're opening 14 feeders by the end of 2023 due to--

SENATOR SMITH: If BPU approves--

MR. MOKOID: No, this is--

SENATOR SMITH: This is already in the works?

MR. MOKOID: This is already in the works.

SENATOR SMITH: OK.

MR. MOKOID: So, this is outside of the filing that we have in front of the BPU.

SENATOR SMITH: OK.

MR. MOKOID: Additionally -- so, it's a multi-layered approach here. We recognize, with the high level of penetration of solar on the ACE system, and the-- Our system is very rural in a lot of areas like Salem, where I grew up.

SENATOR DURR: How would ACE make it easier?

MR. MOKOID: How will we make it easier?

SENATOR DURR: Easier interconnection.

MR. MOKOID: There's two pieces.

One, when we update those, that standard, and the relaying packages on our substation transformers, that removes the majority of the current roadblocks that we see for connection. So, we have a program in place for new customers -- for newly constructed projects when we do it. And, then, we are also-- We have established a multi-year program to proactively install over-voltage protection schemes on our transformers in order to

protect our equipment for reverse power flow. That's the issue that we have. This program is expected to begin -- the large-scale program -- in 2024, and will help us -- prevent us -- from needing to close circuits to solar in future years.

So, we anticipate that will be a three- to four-year program, and you should see the number of closed feeders go down much like they have gone down this year, ramping down toward the end of that program. That will account for the majority of closed feeders for residential solar on our system. The only limitation there is when solar gets into a circuit, when the circuit's capacity of around 44%, then we'll have to do some additional work. But, we're going to make substantial progress here over the next several years.

The other piece you mentioned, Chairman, was large-scale solar. So, we are exploring ways to support through the BPU's grid-modernization proceedings and also in conversations with BPU staff to support large-scale solar projects with a focus on developing cost-sharing mechanisms that lower the financial barriers for solar developers for large interconnections over 1 megawatt. So, we're evaluating multiple scenarios on there where, I think Abe Silverman highlighted the causer-pays model -- the current causer-pays model -- how do we allocate this cost across solar developers? So, when one developer wants to come in and say Cumberland County, where it's very rural, and wants to -- or Salem County, where I'm from -- wants to install a large-scale solar project and the timeframe and the cost may be not palatable to that. So, how do we do it in a way where we distribute those costs while protecting the ratepayers and ensuring -- protecting might be a strong word. While ensuring the ratepayers are protected -- yes, are protected in this, because affordability is the top of our mind.

SENATOR DURR: Doug, what do you need to open up the feeders?

MR. MOKOID: We have our programs in place to open up the feeders.

SENATOR DURR: How many applications do you have right now for it?

MR. MOKOID: We have 1,250 -- I think, at last count -- applications on closed feeders.

The work that we're doing *this* year on the 14 circuits will open up 250-plus of them. And, then, through the next couple of years, we will ramp them down for the residential solar. It is a priority of ours. We have developed plans to address our closed feeders so we know what needs to be done, and we put them into what we call our LRP, our long-range planning process, so that work is accounted for in our long-range planning and our budgeting process, and we're working that down.

SENATOR SMITH: OK, thank you.

And, the other gentleman there is for support, or is there something you're here to say?

MR. MOKOID: He's (indiscernible) as well.

SENATOR SMITH: Arm candy.

UNIDENTIFIED SPEAKER: I'll touch on some of this in my testimony, if you want -- I'm not aware of any feeder issues or challenges that we've had. We've connected over 40,000 solar--

SENATOR SMITH: And, you are--

J A M E S F A K U L T: JCP&L.

SENATOR SMITH: JCP&L, OK.

So, if you wouldn't mind, give us a nutshell version.

MR. FAKULT: Sure.

Well, first of all, Chairman Smith and members of the Committee, thank you very much for allowing me to testify.

I do have written testimony. I'll touch on the highlights on what I wanted to cover.

I just want to start with the obvious. The electric grid is essential to the provision of electric service and needs of customers in New Jersey. It is paramount that the State proceeds with caution (indiscernible).

The interconnection process should, first and foremost, be about protecting the integrity and maintaining reliability as we work together simultaneously to make the interconnection process more efficient; achieve the Energy Master Plan's ambitious goals; and accommodate customers' growing interest in the distributed energy resources and ensure a thorough planning process.

So, regarding interconnections, JCP&L measures it based on new net meters, or meters that read both electric consumed or generated, for example, customers installing electric panels. I would also say that we, along with the other electric utilities in this state, are engaged with the BPU stakeholder process about the proposed changes and the rules governing it, and will continue to keep very active and involved in that regulatory process as well.

We do believe additional resources -- there were some great speakers here today to testify -- I think the more is good to have this discussion.

So, let me-- I'll get into a few specifics. So, in the first quarter of this year, JCP&L has processed about 1,450 applications for interconnection and provided final approval on 1,381 of those. So, the bottom line is about 95% of our applications are fairly small -- less than 25 KW, your typical residential customers. And, generally, a study is not done. Our developers know our process; we work with them frequently, and generally they get done pretty quickly. You don't need to do studies; we don't need to construct. And, as I said a few moments ago, to my knowledge I'm not experiencing -- or, we're not experiencing -- any meter problems, but we do keep our eye on it. We have advanced tools that measure it out into the future.

Now, when you get to the larger interconnection applications, we'll see about 40 or 50 of them a year, it's about 1% of the total. Those do require longer times to study circuit modeling. Sometimes you have to replace transformers; upgrade substations; things along those lines. And, again, we try to stay ahead of the (indiscernible) to speak on those.

SENATOR DURR: What are you doing right now -- are you doing anything in other states than New Jersey?

MR. FARKULT: You know, that's a fair question. We do serve five other states as First Energy.

You know, New Jersey is leading the pace in the First Energy families, relative to solar, and behind-the-meter installations. So, we probably have about 80-90% of all the installations across First Energy right here in Jersey.

Now, I will say -- and, I was going to touch on AMI. I mean, a lot of talk about smart meters, I think it's integral to this whole discussion.

We started a process of installing smart meters this year, we went through an engineering phase last year. We've got about 85,000 -- or, 82,000 -- smart meters installed since March 15 of this year. About 37,000 of those are certified, which means they're actually acting as smart meters and providing us the information that they were intended to. We planned a complete--

SENATOR DURR: You need that information to figure out what's--

MR. FARKULT: That information will read meters, allow us to send out a bill--

SENATOR DURR: And, so, you can use that as a guide for future stuff.

MR. FARKULT: Exactly. It's going to provide us a lot of detail and a lot of information to help us in the future.

SENATOR SMITH: Good for the customers, too. I would assume-- Do you have modified graded rates, depending on when you're using electricity?

I know it's the same--

MR. FARKULT: Yes, not at this point though--

SENATOR SMITH: The theory is you're going to know when the utility would like you to be using electricity, and the incentive will be a lower rate.

So, maybe you'll do your laundry, or do whatever, at 12, 1 o'clock in the morning, but you'll save a bunch of money. That's what the smart meters lead into it.

SENATOR DURR: Right, and so--

MR. FAKULT: It's one of the benefits, correct.

SENATOR DURR: So having anybody saying they don't want to share information--

SENATOR SMITH: Well, that's-- The information issue is another issue.

MR. FAKULT: At this point, we've only had about a half a percent of customers opt out or not want smart meters as we've reached out to them, so I think it's been a pretty good -- it's probably what we expected.

SENATOR SMITH: It worked out.

MR. FAKULT: Yes, it's about what we expected -- about a half a percent.

SENATOR SMITH: And, how about on the labor side?

MR. FAKULT: I beg pardon?

SENATOR SMITH: How about on the labor side? How has your labor force reacted to it?

MR. FAKULT: They understand it's happening. We told them several years ago when the order was passed we will commit to maintaining a job in a place at JCP&L for all--

SENATOR SMITH: So, it has not created turmoil in your organization?

MR. FAKULT: No.

SENATOR SMITH: OK.

MR. FAKULT: The other item -- you know, JCP&L has 112 automatic distribution circuit tie schemes in place, and I think Doug touched on that a little bit as well at ACE. And, we're continuing to invest in that.

What that essentially does is it allows for real-time monitoring of the grid; it allows for automatic picking up of customers if we lose a circuit.

And, we're continuing to invest in that. Over the next several years, we plan to put in an additional 80 circuits with these schemes that I think are very good for customers, and a very good part of the future of the grid. And we will be filing a plan -- the Infrastructure Investment Plan -- this year. So, we're not ready to announce it yet, but that will help us to accelerate the installation of these automatic circuits as well.

SENATOR DURR: Where is the energy more affordable and reliable, as opposed to Jersey and Ohio?

MR. FAKULT: Where is it more-- I think New Jersey -- that's a good question.

Our rates are the lowest in this state, as far as JCP&L rates, our reliability, I think, in the state has been very, very good as well. We've met the reliability standards of the BPU--

SENATOR SMITH: Ever since the July 4 weekend in Seaside Heights several years ago.

MR. FAKULT: I understand, Senator.

SENATOR SMITH: My lights went out.

Anyway, it sounds like you're making very good efforts to keep your system up and responding to the need.

I want to thank you gentlemen for coming out today, and more to follow.

MR. FAKULT: Thank you; thank you, everyone.

SENATOR SMITH: Thank you.

And, thanks to all the witnesses who came today.

We need to get a little work done. Let's do 2708, which is Senator Zwicker's bill. It requires the DEP to consider the potential impacts to natural resources when classifying dams according to a hazard potential.

So, Doug O'Malley, Environment New Jersey, wants to be recorded as in favor with no need to testify. Anjuli Ramos from New Jersey Sierra Club -- in favor, no need to testify. Phil Echevarria is in favor -- Phil, are you here? You are here. --Who is in favor; he represents the Nature Conservancy.

But, Phil, maybe you can give us the short version of why this is a good thing to do.

P H I L E C H E V A R R I A: Well, I have a long essay, but, I guess I'll (indiscernible)

SENATOR SMITH: No, and you don't want to ever read. Everybody falls asleep.

MR. ECHEVARRIA: Well, unfortunately, our dam expert isn't here today, so you got the B-list.

SENATOR SMITH: (indiscernible)

MR. ECHEVARRIA: I'm going to have to read from it, Senator, I apologize.

Good morning Chairman Smith and Members of the Committee.

My name is Phil Echevarria, and I am the Director of Government Relations for the New Jersey Chapter of the Nature Conservancy.

I'll be brief with my comments, as we've submitted our points yesterday. Normally, I would be joined by our Director of Freshwater

Programs, who is the expert on dam removal at TNC, but, unfortunately, she is currently presenting a Rutgers course on dam removal, so you got me.

TNC strongly supports S2708 and believes when classifying a hazardous dam, the State should take into consideration the impact on our natural resources. Currently, the State classifies dams to three categories: low, medium, and high. And, the criteria of the dam and how it's ranked is based on the impact to loss of life and property. If a dam were to breach, it has the potential to impact vulnerable ecosystems, which can cause irreparable damage -- especially with the threat of climate change and biodiversity facing our world.

We owe it to future generations to prioritize our environment the same way that we prioritize people and property. I urge you to vote yes for 2708, and I'll be happy to answer any questions to the best of my ability.

SENATOR SMITH: That was short and sweet.

Any questions? (no response)

There being none -- there being some -- go ahead, Senator.

SENATOR DURR: I have one question; it might not even apply to this.

But, would this bill prohibit a private owner from placing a dam on their property?

MR. ECHEVARRIA: Placing, no, but all dams, even if they were to be removed, need to have the authorization of the dam owner.

SENATOR DURR: So, the government would have a say over personal property.

MR. ECHEVARRIA: Correct.

SENATOR SMITH: I think that's the current law now.

MR. ECHEVARRIA: Yes.

SENATOR SMITH: All that the bill does is they consider potential damages to natural resources as part of the decision-making process when you're considering to remove a dam.

It just adds to the criteria and to the decision, right?

MR. ECHEVARRIA: Correct.

SENATOR SMITH: Good?

SENATOR DURR: I'm good.

SENATOR SMITH: All right, Bill Kibler, Raritan Headwaters -- in favor.

Mr. Kibler, why is this a good thing to do?

And, this is the last witness.

Bill.

B I L L K I B L E R, J.D.: Thank you, Senator.

As you may be aware, there are over 1,800 regulated structures in the State of New Jersey -- and, I use the term "regulated structures" intentionally, because a dam isn't a dam in the State of New Jersey unless it raises the water level at least 5 feet above the normal low water mark. So, there are a lot of structures that you and I would recognize as a dam that are not necessarily regulated as dams. All of those structures -- whether they're regulated or not -- have a significant short-term and long-term impact on our watersheds.

So, what we see in my watershed -- and, you'll see it elsewhere in the State -- for example, is much higher water temperatures. Upstream of the dam, you see a significant amount of sediment buildup. We see the temperatures rise as those impoundments get shallower and shallower.

And, one of the impacts that folks often don't consider are the impacts downstream of the dam. So, I won't give you a tutorial in physics -- I'll let Senator Zwicker handle the physics side of this -- but streams carry sediment, and the amount of sediment that they carry is a function of velocity and volume; how fast the stream is moving, and how much water is moving in the system. When you put a dam in the middle of that system, it messes up the physics. The water stops moving, the velocity drops, and all the sediment drops out. That's what -- that's the impact that we tend to see, that impacts water quality, it impacts habitat.

What we often don't consider are the impacts downstream. So, when that water comes over the dam -- which is almost always very warm water, because it's coming off the top of that impoundment -- when that water comes over the dam, it's picking up velocity. So, as it picks up velocity, it's picking up sediment. Where is it going to get the sediment from? It has to carry the sediment; it's just physics. It gets the sediment from immediately downstream of the dam. So, the area downstream of the dam gets severely scoured. We call it "the sediment start." And, if you go and look at one of these dams and look downstream, you'll see these impacts for hundreds of yards, sometimes a mile or more downstream of a dam.

So, the impacts of dams on the environment are very significant. The challenge we've always had is to get dams safety; to look at things other than just the engineering aspects. So, that's the intention of this bill. We support it, I think it is an excellent idea to get dam safety, talking to other folks in the Department about impacts of these dams other than on human health and real estate.

Before I leave Senator, I recognize that the Department may have challenges with having enough folks to implement the bill. My response to that is that the answer ought to be -- the answer shouldn't be, "We can't do this because we don't have the bodies." The answer ought to be, "We're happy to do this, but we need more resources."

Thank you.

SENATOR SMITH: Mr. Kibler, that was our last witness.

Any discussion? (no response)

Motion to release by our good Senator, and myself -- I'll be happy to second.

Let's take a roll call vote.

MR. HANSEN: On the motion to release Senate Bill 2708.

Senator Stanfield.

SENATOR STANFIELD: Yes.

MR. HANSEN: Senator Durr.

SENATOR DURR: Yes.

SENATOR SMITH: That was a reluctant yes, but it--

SENATOR DURR: It is a reluctant yes.

SENATOR SMITH: It's still a yes; it still counts.

MR. HANSEN: Senator Singleton left a yes vote.

Senator Greenstein stepped out -- I'll get her vote later.

And, Chairman Smith.

SENATOR SMITH: Yes.

And, the bill is released.

Next bill is Senator Deignan's bill, 3255. Increases the percentage of reclaimed asphalt pavement that can be used for local road

projects, and -- let me -- just FYI, before Assemblyman Karabinchak, who is the sponsor in the Senate, weighs in, we have all these people not testifying.

Matt Halpin, New Jersey Society of Municipal Engineers -- he's going to actually testify.

Abby Adams, Associated Construction Contractors -- in favor, no need to testify. Ryan Sharpe, Utility and Transportation Contractors Association of New Jersey -- in favor, no need to testify. Ryan Berger, New Jersey SEED -- in favor, no need to testify. Ray Cantor, NJBIA -- in favor, no need to testify. Kyle England, New Jersey Concrete and Aggregate Association -- in favor, no need to testify. Mike Egenton, New Jersey State Chamber of Commerce -- in favor, no need to testify. Mark Longo from the Operating Engineers Labor Management Fund, ELEC 825 -- in favor, no need to testify.

And, we have two witnesses who actually want to say something -- not counting the sponsor in the Assembly, Assemblyman Rob Karabinchak.

Why is this a good thing to do, Assemblyman?

ASSEMBLYMAN ROBERT J. KARABINCHAK: Thank you, Mr. Chairman.

I am here just to testify quickly regarding the bill. This is something that we've been talking about for years. Currently, we have over 15 million tons of recycled asphalt in piles all around the State of New Jersey.

As we all know, as we drive through this beautiful state, we see our roads being changed and resurfaced. That creates the piles. However, we have not been able to use that recycled material back into the roadways.

That's what this bill does. It puts a little bit higher percentages back into the local, municipal, and the State highways. We've worked with

DOT and the stakeholders on this bill, and we believe we came to a reasonable compromise. And, this is something that will change where we're at today, and also this will help the cost of our roads, which is also important.

So, with that being said, Mr. Chairman, I hope the board -- or, the Committee -- will pass this. If there's any questions, I would be happy to answer anything from any of the Committee.

SENATOR SMITH: Any questions for Assemblyman Karabinchak? (no response)

You convinced them all. Thank you, Assemblyman. Thanks for your hard work on this legislation.

Matt Halpin, New Jersey Society of Municipal Engineers -- you say in favor with amendments, but no need to testify.

Matt, are you here?

M A T T H E W H A L P I N: (indiscernible)

SENATOR SMITH: So, the comment about "with amendments" we should ignore?

MR. HALPIN: Right.

SENATOR SMITH: OK, hereby ignored.

Kevin Monaco, New Jersey Asphalt Pavement Association -- in favor.

Kevin.

K E V I N M O N A C O: Mr. Chairman, we have submitted written comments, and, after hearing the sponsor explain it so well, we--

SENATOR SMITH: He was so eloquent, there's no need for any--

MR. MONACO: There's no need to testify at this point.

Thanks.

SENATOR SMITH: All right, you're on record in favor.

Thank you.

Those are all of the slips.

ASSEMBLYMAN KARABINCHAK: And, Mr. Chairman, one last thing -- yes, this does have amendments. You have the amendments that I should have said right in the beginning.

SENATOR SMITH: Oh, you mean they've been done?

ASSEMBLYMAN KARABINCHAK: They've already been done, yes. Nothing to change.

MR. HANSEN: Do you want me to describe them?

SENATOR SMITH: Yes, if you wouldn't mind describing them for the Committee, that would be great.

MR. HANSEN: OK, the amendments would provide that Section 1 of the bill would apply to the DOT in addition to local contracting units; provide that Section 1 of the bill would apply to public highway projects in addition to local road projects; and add a definition of public highway project; modify the percentage of recycled materials and recycled asphalt pavement that can be used, pursuant to Section 1 of the bill; establish certain conditions on the use of recycled materials, pursuant to Section 1 of the bill; provide that Subsection B in Section 1 of the bill, which allows for greater percentages of recycled asphalt pavement and local road projects, applies only to projects that do not receive state funding; removes Section 2 of the bill; add a new Section 2 of the bill, which concerns the percentage of recycled asphalt pavement that must be authorized for certain low-volume road projects; provide that the bill would go into effect six months after the

date of enactment, rather than immediately; and, make other technical and clarifying changes.

SENATOR SMITH: With those amendments, motion to release by Senator Stanfield; second by Senator Greenstein.

Let's take a roll call.

MR. HANSEN: On the motion to release Senate Bill 3255 with Committee amendments.

Senator Stanfield.

SENATOR STANFIELD: Yes.

MR. HANSEN: Senator Durr.

SENATOR DURR: Yes.

MR. HANSEN: Senator Singleton left a yes vote.

Senator Greenstein.

SENATOR GREENSTEIN: Yes.

MR. HANSEN: And, Chairman Smith.

SENATOR SMITH: Yes.

The bill is released unanimously.

ASSEMBLYMAN KARABINCHAK: Thank you, Mr. Chairman; thank you Committee.

SENATOR SMITH: So, our last item of business today -- and the one that has received the most comments and input -- is our PFAS bill.

The bill is -- and, it's for discussion only -- it is S3177 by Senator Greenstein and myself. Protecting Against Forever Chemicals Act -- that's the title -- establishes requirements, prohibitions, and programs for the regulation of perfluoroalkyl and polyfluoroalkyl substances, commonly referred to as PFAS.

Now, give me 30 seconds to talk to Senator Greenstein, and we'll get this started.

The way in which we're going to handle this is to have an opening statement from Senator Greenstein about this very, very important legislation, and then I am going to turn the hearing over to her to run it. I don't know if you notice, but I now can see. I had two cataract surgeries this month, and today is the day I'm supposed to go back to the eye doctor, who is going to say, "My God, your vision is wonderful."

(laughter)

And, it's a very good thing for a lawyer to be able to read contracts.

So, the good news is we're going to have this very important hearing go forward under the leadership of Senator Greenstein. One comment before she gets started is I hope you're watching what's going on around the country. We just had the first settlement on PFAS issues -- it's called the Stuart Florida case, and there are hundreds and hundreds of millions of dollars that are being paid by 3M and others because of the cost of the water treatment that's anticipated in their water systems. By settling on the courthouse steps, none of the issues had to go forward in the litigation.

But ask yourself the questions: Why are the manufacturers of these chemicals willing to pay hundreds and hundreds and hundreds of millions of dollars if there's not a big problem? Ask yourself the question why the EPA has now issued standards, and the standards have gotten lower, and lower, and lower. I think it's now at six parts per trillion, does that sound about right? But, it's -- this is a really serious matter, and I know we've received a lot of letters saying, "Don't do anything, you'll kill the world, the

economy will die, my company will go out of business." Well, how about your sons and daughters? And yourself? Have you looked at whether you have PFAS in your water supplies?

So, it's unbelievably serious and very important, and Senator Greenstein should be applauded for taking the bull by the horns -- and, this is a bull -- and you're going to take the hearing by the horns, too. So, let me turn it over to Senator Greenstein, and I'll slip out.

Thank you.

SENATOR GREENSTEIN: Thank you, Chairman. Good luck with the eyes. They're kind of important. (laughter)

And, thank you so much for posting this bill for discussion only today.

I would like to give a brief introduction to the background and purpose of Senate Bill 3177. PFAS are a class of synthetic, manmade chemicals, that became popular for their ability to repel water, oil, and grease, and resist heat. Those properties have made PFAS a valuable addition to products such as cookware, paint varnishes, nail polish, cleaning products, pesticide, shampoo, and firefighting foam. However, PFAS have been proven to pose a serious risk to public health and to the environment. They're called "forever chemicals" because the chemistry of these compounds prevents them from naturally breaking down over time. That means that once they're introduced to an environment, they're not going anywhere.

That's why one of our best tools in fighting further contamination is to minimize future use of these chemicals. S3177 first and foremost would prohibit the sale of cosmetics, carpets, and fabric treatment and food packaging that contain PFAS after two years. We upped it from

the original one year, and now it's two years. Any cookware containing PFAS would need to have a disclosure label on them. These products were intentionally chosen, as they come into direct contact with our bodies and our food, running the highest risk of direct contamination.

The bill will also require manufacturers to report information on products containing PFAS to the New Jersey DEP, including a description of the product and the amount of PFAS in the product. We've heard across the board the concern that one year is not enough time, and that's the reason -- for reporting, that is -- that's the reason we've doubled that amount of time. At the feedback of other stakeholders, we've also proposed amendments that would create exceptions for a host of products regulated by the FDA and other Federal processes, including drugs; medical devices, medical equipment, and their packaging; insecticides; pesticides; fungicides; and rodenticides -- I didn't even know that was a word, rodenticides. OK, I learned something.

I will ask OLS to read a more complete summary of the draft amendments, but I am looking forward to hearing your comments on these proposed changes.

Before we get started, I just want to reiterate that New Jersey is not an outlier in this space. Many states are turning their attention towards PFAS. A couple of them -- and, we have some of them remotely today -- Maine, Minnesota, Nevada, New York, and many others have adopted or are considering product bans or similar regulation. The nation is gradually learning that this is a critical issue that must be addressed. I and my wonderful staff here have spent the last year meeting with groups to try and get a better idea of how this legislation can take shape.

Today, S3177 is up for discussion only. I would like to create a continuing dialogue with my colleagues on the Committee and the public a chance to weigh in -- and, also, from the many groups who have weighed in.

The amendments we're proposing are a first attempt at addressing some of the concerns we've heard. I expect to do a lot more work on this bill before it's voted on and ultimately moves through the Legislature.

Thank you all very much.

We have many slips of people who want to testify today, but I am going to start with the virtual speakers. The first person I have on the list -- I have about six people on the list here -- Tasi Hogan, Director of Advocacy from a cosmetic company called Beautycounter. And, I'll let her tell you her views on the bill.

Thank you, Tasi.

T A S I H O G A N: Hello, and good afternoon Chair Smith, Vice Chair Greenstein, and members of the Committee.

My name is Tasi Hogan, and I am the Director of Advocacy of Beautycounter. Beautycounter, a leader in clean beauty, is thrilled to support Senate Bill 3177 -- otherwise known as the Protecting Against Forever Chemicals Act -- and we appreciate you taking the time to discuss this critically important piece of legislation today.

As the Senator mentioned, Senate Bill 3177 would establish requirements, prohibitions, and programs for the regulation of per- and polyfluoroalkyl substances, otherwise known as PFAS.

At Beautycounter, we've built a movement across the U.S. and Canada for improved transparency and accountability in the personal-care products industry, which covers everything from makeup to lotion,

deodorant, and other cosmetics. You can find our products online, in Ulta -- the country's largest beauty retailer -- and through a network of over 40,000 brand advocates. Our mission is to get safer products into the hands of everyone, and we believe that advocating for more health protective regulations at the Federal and State levels is an important part of delivering on this mission.

With millions of products sold across North America and various third-party certifications and awards for our thorough approach to safety, we have prohibited 2,800 ingredients, including PFAS, from our products. PFAS, as you heard, are used in a variety of applications, but are used in the personal-care products industry to create products such as long-lasting lipstick, long-wear foundation, and waterproof mascara. Unfortunately, this class of chemicals has been linked to numerous health problems and is known to pollute drinking water and persist in the environment, which ultimately harms ecosystems, wildlife, and people.

The Modernization of Cosmetics Regulation Act -- otherwise known as MoCRA -- passed last year at the Federal level. While this bill expanded the Food and Drug Administration's authority over personal-care products, the reality is that the industry remains severely underregulated. As an example, MoCRA failed to ban harmful chemicals from personal-care products, including PFAS. While companies like Beautycounter ban PFAS from our products, and we continuously work with our partners to increase supply-chain transparency, many companies in the beauty industry supply chain, such as raw material suppliers and packaging suppliers, are not held accountable. Without stronger regulations, it can be challenging for brands to have full accountability for their supply chains.

You have the opportunity to help by supporting this important piece of legislation, which would protect public health by prohibiting a harmful class of chemicals from consumer goods and also increase transparency along the supply chain.

With the recent valuation of $1 billion, Beautycounter has proven that banning classes of harmful chemicals, including PFAS, from personal-care products does not hinder the industry's ability to conduct business or deliver on consumer expectations.

We appreciate your time today hearing discussion about this important bill, and we encourage you to support this PFAS legislation to ban this harmful class of chemicals from consumer goods sold in the great state of New Jersey once and for all.

Thank you for your time.

SENATOR GREENSTEIN: Thank you very much for your testimony.

Where is your company based? Where are you right now?

MS. HOGAN: Sure, thank you for that question.

We are based in Santa Monica, California. However, we do have brand advocates who are distributors of our product in the State of New Jersey.

SENATOR GREENSTEIN: You mentioned when we talked earlier that one of the products that you can't do is waterproof mascara. Does not having PFAS in your products prevent you from doing anything else besides that?

MS. HOGAN: I mean, you typically see PFAS used for waterproof mascara and long-wear foundation. What we found-- So, we do

not offer those products; we do not offer waterproof mascara or long-wear foundation. However, our products are still extremely efficacious -- we wouldn't have received a $1 billion valuation if our products did not work.

So, I think the important thing here is that our business model has proved that you can find alternative ways of formulating incredibly effective products while not harming consumers and while not -- while ensuring that consumers are not putting a harmful class of chemicals like PFAS on their face, on their baby's skin, on their family's skin.

SENATOR GREENSTEIN: We really appreciate it, thanks.

MS. HOGAN: Thank you, Senator, I appreciate your time.

SENATOR GREENSTEIN: Thanks.

The next person who I wanted to call was Gretchen Salter, Strategic Advisor from a group called Safer States.

And, Gretchen, if you could tell us about the group briefly and what it does.

GRETCHEN SALTER: Sure, thank you so much.

So, thank you so much for the invitation to speak here today and to you, Senator Greenstein, for your leadership in sponsoring this important measure.

Safer States is an alliance of environmental health organizations from across the nation, committed to building a healthier world. We were founded in 2005 by seven state-based groups as a way to unite efforts to reform our nation's broken chemical policy system that allows chemicals like PFAS to enter our air, and water, and soil. And, in 2017, seeing the devastation that PFAS was bringing to communities, we joined forces with legislators, local groups, environmental justice organizations, and scientists

to educate policymakers about the dangers of PFAS and the need to eliminate it from our products in the environment.

So, as folks have said, PFAS is a class of chemicals that's comprised of approximately 12,000 chemicals -- that we know of at this point -- and they all have at least one fully fluorinated carbon. So, this carbon fluorine bond is the strongest bond in organic chemistry, and it's what makes PFAS such a problem. PFAS are persistent in the environment; they are highly mobile; and some bio-accumulate in humans. They have no known degradation pathways, meaning that they stay in surface water, ground water, wildlife, and people, and are passed down through generations from mother to child through umbilical cord blood, and breastfeeding. These chemicals move throughout the globe as a result of human use and end up in areas such as the Arctic and remote wildlife areas, and in the open oceans.

So, PFAS contamination is widespread, and is going to cost taxpayers -- is *already* costing taxpayers -- billions of dollars to clean up. So, more action needs to be taken now, and states across the country are taking action on PFAS to eliminate them from products, and New Jersey really should do the same.

So, so far, 12 states have eliminated PFAS from food packaging, and some of those states have even eliminated PFAS from plastic food packaging and not just fiber-based packaging; 12 states have eliminated it from firefighting foam; eight states have eliminated PFAS from textiles, including carpets and rugs and apparel; and, five states have eliminated it from cosmetics. You'll hear later from folks in Maine and Minnesota who can talk about these laws a little more, but in 2021, the State of Maine passed a law requiring disclosure of PFAS in all products and to eliminate all use of

PFAS and products except those that are currently unavoidable by 2030. And, just last month, Minnesota passed the most comprehensive PFAS law in the world, banning it from a number of different product categories while also requiring disclosure of PFAS and products and banning all non-essential uses by 2032.

It's not just states that are taking action -- retailers like Target, Home Depot, and Lowe's have also adopted policies to eliminate PFAS from store shelves.

And, so, you may hear today that the definition of PFAS used in this bill is too broad, or that there's no way that manufacturers can comply with this law. So, on the first point, the definition of PFAS in this bill is the same definition that's been used in all of the states with PFAS regulation. It's the most comprehensive definition, and gives your state agency the most leeway to regulate these dangerous chemicals.

And, as to the second point: Manufacturers have known that PFAS is a problem for years. The first state PFAS policy was passed in 2018, and news reports of PFAS' ability to cause harm to public health and the environment have been prominent features in media for at least the last six years. There are stories nearly every single day talking about new lawsuits against PFAS manufacturers; new policies restricting PFAS; and worldwide efforts to clean up PFAS pollution. In fact, 21 states have already filed lawsuits against PFAS manufacturers, and more lawsuits are on the way. This bill should not blindside anyone.

And, some may claim that there's no way to know what is in their products due to complicated supply chains. But, we just heard from Beautycounter that that's not true. And, we really need to ask those who are

saying that, "Why? Why don't they know what's in their products, and shouldn't they have a responsibility to find out?" This bill gives them ample time to discover if there are PFAS in their products, and, in fact, it's in line with the Maine and Minnesota programs for disclosure.

(indiscernible) of 3M -- who was the company that started making PFAS in the first place six years ago -- they've already made the list of products public containing PFAS. So, this is something that some manufacturers are already doing.

It's critical that New Jersey not rely on other states to solve the PFAS crisis. The more states that act, the faster we can address this crisis. Moreover, for those states that *don't* act, they risk becoming a dumping ground for products containing PFAS that can't be sold elsewhere. We are already seeing this happen as PFAS laws go into effect in early adopter states, and those states that don't act will be the states that receive products containing PFAS while states with regulations will get safer products.

New Jersey also can't rely on the Federal government to act. The EPA had evidence of PFAS toxicity for over two decades before they were forced to take action. And, even now, we only have seen minimal efforts to address PFAS in consumer products. Yet again, it is up to the states to protect their residents from harm.

So, thank you so much for allowing me to speak today. I urge you to keep working on this measure, and we stand ready to assist you in any way that we can.

SENATOR GREENSTEIN: Gretchen, thank you very much for your testimony.

On the issue of what the Federal government is doing, I realize they haven't always been successful in trying to work on this, and as fast as some other issues, but is there anything they're doing that's making any progress right now?

MS. SALTER: Sure--

SENATOR GREENSTEIN: Because I know that's one of the things some people say, "Well, let the Federal government do it."

But, I'm not clear how much they're really doing.

MS. SALTER: Well, if we're looking at what this bill addresses, which is looking really at consumer products and the products that PFAS is in, there's not a lot that's really happening on the Federal level. There are some measures that are before Congress right now to eliminate PFAS from food packaging, and there have been some regulations to eliminate PFAS from firefighting foam in very specific situations, certainly, for DOD use.

There are also some draft regulations for drinking water levels that have been proposed by the EPA, but those have not been finalized.

So, there are a few measures here and there, but really what New Jersey is trying to do goes far and beyond what the Federal government is even considering right now. And, that is really looking at consumer products; looking for disclosure in consumer products; and taking it out of products where we can.

SENATOR GREENSTEIN: Where are you located?

MS. SALTER: I'm sorry, if you're speaking I can't hear you.

SENATOR GREENSTEIN: I'm sorry.

Where are you located?

MS. SALTER: I am personally located in northern California. Safer States is a national organization with our offices based in Portland, Oregon.

SENATOR GREENSTEIN: Well, thank you for getting up early today. (laughter)

MS. SALTER: You're welcome.

SENATOR GREENSTEIN: I appreciate it.

OK, the next person I'll call is Dr. Katie Pelch, who is a scientist with the National Resources Defense Council.

Thank you very much, Katie.

K A T I E P E L C H, Ph.D.: Thank you.

Good afternoon, Senator Greenstein and Committee members.

Thank you so much for this opportunity to speak with you today.

My name is Katie Pelch, and I am a scientist on the NRDC's toxics team, where I work primarily on PFAS.

With scientific partners, I have developed a comprehensive database of over 1,000 scientific studies on the health and toxicological effects that have been linked to PFAS exposure. I also recently co-authored papers detailing the scientific reasoning for why PFAS should be managed as a class, and a pilot study exploring the utility of measuring additional PFAS in drinking water beyond those that are currently monitored for by EPA.

In that study, we found that EPA's methods significantly underestimate the PFAS burden in drinking water for many communities across the U.S. And, this just further highlights the need for regulatory actions that address the entire class of PFAS.

As we already heard, the class of PFAS represents thousands of chemicals, and these are defined by the presence of at least one fully fluorinated carbon atom. This definition is not only the most comprehensive, as Gretchen just pointed out, but it is also scientifically defensible. Scientists agree that the carbon-fluorine bond is one of the strongest covalent bonds in organic chemistry, and it is what confers the hazard property of persistent PFAS.

NRDC supports strong action on all PFAS, which now constitute a major global, environmental, and public health threat. This is because PFAS are extremely persistent, meaning they are very resistant to breakdown. They tend to be highly mobile, spreading quickly in the environment, making their contamination hard to control *and* clean up. PFAS can bioaccumulate, or build up in plants, animals, and humans. In fact, national bio-monitoring shows that virtually all people living in the U.S. have PFAS in their bodies. PFAS have also been linked to serious health effects, such as cancer, kidney and liver damage, and immune system and developmental toxicity -- which we heard about from the Chair.

And, PFAS are likely to impose *massive* health-care and cleanup costs. The current "one-chemical-at-a-time" approach has not been effective at controlling widespread exposure to PFAS, as other PFAS has just been rushed in to replace any banned or regulated chemicals. And, so, the magnitude of the problem demands a more efficient and effective approach, which is why prominent scientists from around the world have urged their class-based approach for managing PFAS -- including a phase-out of all non-essential uses of PFAS.

The European Chemicals Agency and the states of Maine and Minnesota -- who you will hear from momentarily -- have already proposed a ban on all non-essential uses of all PFAS, and more than 10 other states have banned the unnecessary use of all PFAS in specific product categories, including textiles, firefighting foam, food packaging, juvenile products, and cosmetics.

And, earlier this year, scientists from NRDC were part of a scientific collaboration that published a paper on this alternative approach to managing hazardous chemicals, which is known as the "essential use approach." It posits chemicals of concern like PFAS should not be used in products or processes where any of the following are true: First -- or, one -- they're being used for non-essential functions within products; two, their use in a product is not critical for the health, safety, or functioning of society; or, three, when there are safer alternatives.

Now, the goal of this approach is to discontinue the use of toxic chemicals when they're not needed. The bill that we're discussing here today has already correctly identified several uses of PFAS that are non-essential, and therefore can be immediately discontinued: cosmetics, carpets, and fabric treatments and food packing. The agency should use this framework in suggesting to the Legislature additional uses of PFAS and products that are non-essential.

And, so, the two policy approaches -- managing PFAS as a class, and eliminating unnecessary use of PFAS -- are what is needed to respond to the magnitude and urgency of this crisis. These approaches, together with the other actions that were outlined in the Protecting Against Forever Chemicals Act, including reporting all intentional uses of PFAS; additional

funding for research and monitoring of PFAS in the environment; and the establishment of a source reduction program will help protect our children and our communities from these toxic forever chemicals.

So, we look forward to working with you further on this bill.

Thank you.

SENATOR GREENSTEIN: Thank you very much for your testimony.

Where are you located? Are you California?

DR. PELCH: Yes -- I am actually located in Idaho, but NRDC is also a national organization with offices across the U.S.

SENATOR GREENSTEIN: OK, thanks.

Any questions, comments? (no response)

Thank you very much. I really appreciate it, thank you.

Adam, are you there -- Adam Nordell?

Hi.

A D A M N O R D E L L: Hello, good afternoon.

Nice to see you all, and thank you for considering this bill -- this very important bill.

Good morning Senator Smith, Senator Greenstein, and distinguished members of the Environment and Energy Committee.

My name is Adam Nordell, I am a Campaign Manager for the environmental nonprofit Defend Our Health, and a PFAS-impacted farmer in Maine. I submit this testimony in support of Bill S3177.

How we regulate chemicals in products has a very real impact on consumers, and on communities near production and disposal sites. For most of the past 13 years, my wife and I ran a farm here in Maine. We built a

successful small business growing fresh, organic produce, and selling it across the state. We started a family on the farm, and (indiscernible) to raise our child connected to the land and familiar with how food grows. Then, we were startled and terrified last winter to learn that our farm had been spread with municipal wastewater-treatment sludge from the early 1990s.

Subsequent testing revealed that our drinking water was contaminated more than 400 times the interim drinking water standard for PFAS, which is 20 parts per trillion. After drinking that water and working that contaminated soil for seven years, my family has industrial-level exposure to the chemicals. The National Academies of Science, Engineering, and Medicine recently identified a host of illnesses, including kidney cancer, that are linked with PFAS exposure above 20 parts per billion. My own blood serum tested at 3,547 parts per billion -- 177 times the elevated risk threshold identified by the National Academies.

The discovery has entirely upended our lives -- our business is closed, and the fields are completely fallow. My wife and I are left with significant worries about our health and the health of our child. The man who sold us our farm did so because he was dying from the cancer that we now know is linked with PFAS exposure.

The State of Maine has identified more than 385 drinking water wells, and 25 school water supplies, contaminated with PFAS above our safe drinking water threshold. More than 6,000 current students at those schools have been exposed to contaminated drinking water. In response to this ballooning public health crisis, the State of Maine has appropriated more than $100 million to support impacted communities with water filtration; financial aid for farmers; and resources to deal with the health impacts.

It would be foolish to throw that much money at a problem when the tub is still overflowing, and, so, our legislature has also moved to turn off the PFAS tap all the way upstream. Maine's LB1503 was enacted (indiscernible) all manufacturers of products containing intentionally added PFAS to report those uses to our Department of Environmental Protection's Safer Chemicals Program. Products with intentionally added PFAS will be banned from sale in Maine by 2030. The Safer Chemicals Division-- We used the exposure data to determine which PFAS product uses are currently unavoidable, and those products will be exempted from the ban. This year, we amended the bill in partnership with the Maine Chamber of Commerce to allow for more time for the disclosure requirement, and to exempt certain small businesses from having to disclose on behalf of (indiscernible) suppliers.

This bill is a success, and will help to protect Maine communities like mine from being additionally exposed to PFAS. The toxins in our products wind up in our waste stream, and our waste stream impacts our water, our air, and our food.

Maine's contamination is not unique. Almost all states have agricultural sludge-spreading programs without regulatory thresholds for PFAS. I recently saw an ABC news story listing New Jersey as the state with the second-most PFAS-impacted drinking water. Across the country, the spigot is wide open right now, but we know enough to make better regulatory decisions.

Let's move away from PFAS as a class.

Thank you so much, and I'm happy to answer any questions.

SENATOR GREENSTEIN: Thank you very much, we really appreciate it.

Any questions? (no response)

Thank you very much.

MR. NORDELL: Thank you.

SENATOR GREENSTEIN: Congratulations on your bill.

OK, and the last person I have here is Avonna Starck -- Clean Water Action, Minnesota.

A V O N N A S T A R C K: Hello, Senator Greenstein, and Environment and Energy Committee members.

My name is Avonna Starck, and I am the State Director of Clean Water Action Minnesota.

Clean Water Action does, proudly, have a New Jersey office as well. We are focused on ensuring that everyone has access to clean, drinkable, swimmable, and fishable water.

And, I am here in support of Senate Bill 3177, and to explain that comprehensive action on PFAS *can* happen in New Jersey, as it has happened in Minnesota.

Our legislative session wrapped up recently, and we had a robust and successful conversation regarding PFAS, resulting in the most comprehensive legislation in the nation. And, as Gretchen and I have talked to probably the world addressing the need to turn off the tap of these toxic chemicals, preventing them from flowing into our water.

Minnesota is the origin story of PFAS, since we're the home of 3M, where PFAS was developed. We're also home to a massive PFAS plume due to 3M dumping the chemical in the 1970s. My community has seen firsthand the devastation this chemical creates, and I applaud you for taking action.

Minnesota's legislation has three main components: A total ban on 11 consumer items beginning in 2025 -- these items include cookware; carpet and rugs; cooking products; fabric treatments; dental floss; period products; juvenile products; textile furnishings; ski wax; upholstered furniture; and cosmetics. And, as Gretchen said, the Municipal Pollution Control Agency will determine what other items are non-essential via the rule-making process, and, thus, those items will be banned beginning in 2032.

The legislation also phases out PFAS in firefighting foam, and creates a requirement for industry to disclose to the MPCA if items sold in Minnesota contain PFAS. Items deemed essential for the health and safety of society are exempt from this bill, and that's determined through the rule-making process as well. So, do not let industries fearmonger you and tell you that cars won't run; airplanes will fall from the sky; and that MRI machines won't work -- that's just not true.

Because of the Chemical Clearinghouse website that multiple states already use to disclose these chemicals and products, the companies are already disclosing the PFAS in other states, so this should not be a heavy lift to report in New Jersey.

Minnesota has a PFAS blueprint, and that addresses prevention of PFAS pollution; the management of PFAS where prevention is not feasible; and, finally, how to clean up contaminated sites. This week, the MPCA announced that cleanup will cost the state anywhere between $14-28 billion -- that's with a "B" -- dollars over the next 20 years. The MPCA also stated that PFAS can be purchased for between $50-1,000 a pound, but for cleanup, that cost comes between $2.7 million and $10 million per pound, to clean up

and remove and destroy from municipal wastewater. So, there's a big price disparity there.

Minnesota defines PFAS as a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom. Industry will tell you that the definition of PFAS should be expanded to be defined as two fluorinated carbons, despite every other state defining PFAS as one fluorinated carbon atom. This is a tactic they're using to sell more toxic products in your state. They will ask you to exempt HFOs -- which are a type of PFAS -- and the fact is HFOs *are* PFAS, and all PFAS that have been studied have been linked to negative health outcomes. This is also an approach by industry to sell more products and protect profit over people.

The Sustainable PFAS Action Network -- or SPAN -- flew into Minnesota after they had been unsuccessful in Maine at killing *their* PFAS bill, in an attempt to offer poison-pill amendments to *our* bill. This is what they do -- fly in on industry's dime around the country and attempt to protect corporate profits. They will argue for internal components of items to be exempt -- Whirlpool did this. An appliance repair technician offered testimony on our bill, and he said, I quote, "As a business owner and full-time employee, I'm working double duty to help provide for my family. I take side jobs after work hours and on the weekends. I do this to be able to afford a nice house in a safe neighborhood and to save for my children's future. But, now, I'm learning to redefine 'safe.' Safe doesn't only mean freedom from crime, poverty, access to food, or medical care. Now, I have to add toxic chemicals to the list of things that threaten my family's safety."

This appliance tech spends all day working on the internal components of appliances -- the same components industry argues should be

exempt from PFAS bans. And, remember that components of items that you don't normally come into contact with still end up in landfills, which can leach into the groundwater.

The process of PFAS being banned around the world has begun. For American companies to remain competitive in the global marketplace, we must take action, or we risk having no one to do business with or sell our products to.

And, please remember that internal documents have been released, proving that industry knew PFAS was dangerous and bioaccumulated in the blood as early as the 1950s. These documents, obtained from industry memos and studies, build the case that industry knew for decades that these chemicals were linked to terrible illnesses suffered by those exposed. And, yet, industry continued to manufacture and sell products with PFAS. They *knew* it was dangerous.

This legislation would save your taxpayers millions of dollars by turning off the tap of new PFAS entering your environment, which then, of course, results in costly cleanup. It will save New Jersey families money on health-care costs, which racks up real quickly when somebody you love gets sick. And, this legislation, most importantly, would save lives. It's the right step to take to protect New Jersey.

Thank you, and I'm here for questions.

SENATOR GREENSTEIN: Thank you very much, and congratulations on your bill.

Any questions? (no response)

We don't have any, but thank you, we'll be in touch I'm sure.

Thank you.

OK, so we're now finished with the remote testimony, so now I will go to in-house testimony here.

OK, first I will call Ben Graziano and Nicholas Georges -- Chemistry Council of New Jersey and the Household Commercial Products Association. It says seeking amendments. Now, many people are, so I'm going to ask you to just tell us very briefly what the amendments are and then we'll ask for copies eventually.

B E N E D E T T O A. G R A Z I A N O: Absolutely.

Good afternoon, now. Ben Graziano, I'm the Policy Director for the Chemistry Council of New Jersey. I am joined by Nicholas Georges, he is a chemist and the Vice President of Scientific and International Affairs for the Household and Commercial Products Association.

First of all, we'd like to thank the Senator for the work she's done on the amendments that have already been provided. These amendments include some very reasonable exemptions, one being the Federally regulated pesticides, and we're very appreciative of the extensive dialogue that we've had moving forward, and looking forward to the future dialogue.

You heard a little bit of testimony, briefly, and one of the amendments we *were* going to seek is changing the definition of what is a PFAS to two fully fluorinated atoms. Delaware actually uses this definition, so the comments that they said no other states have done that is inaccurate.

We believe it's possible for the bill to achieve its intended goal. So, we think that by moving towards these reasonable changes and others that are going to be proposed -- and the others we're going to mention today -- we can do that. I think it's something that you can do; I feel that some of the information that has already been provided may kind of paint a different

picture than what we're going to speak about, and I'm going to, at this time, transfer it over to Nicholas here who has a little bit more expertise in the area and can speak more eloquently than I can.

N I C H O L A S G E O R G E S: Oh, I don't know about that, but thank you.

Thank you all for having me today, I greatly appreciate it; I appreciate this opportunity. And, thank you for the (indiscernible) exemption, or the consideration of it.

Echoing the definitional concern, there are compounds within the class of PFAS that meet the definition of one fully fluorinated component that degrade within days within the atmosphere. If we're talking about going after the forever chemicals, we support that. We're looking at various issues from a toxicological sampling – bioaccumulation, yes, we want to address that.

My members are moving away from PFAS substance no matter what you decide to do here today. The branding of PFAS has made it so that consumer-based products want to get out of the substances as fast as they can because the (indiscernible) just aren't good -- period, end of story.

So, we're not saying, "Don't do anything here today." Understand that companies are already taking that action.

About the definition piece, though, there are compounds -- and, you'll hear about them later on today; primarily, HFOs have already been mentioned here -- that are critical to our industry. Later this summer, your Department of Environmental Protection is going to undergo a rulemaking to strengthen your VOC regulations. My association goes state to state to support that action, because we worked on the model rules to make it happen.

The model rules make it so that you can make reductions on VOC emissions without impeding interstate commerce -- therefore, we support that, because everybody is working off the same framework and we have the harmonization that we need to be able to do business there. Those compounds allow us to do that.

Historically, we have been using higher global-warming potential items to comply with the VOC regulations to reduce our impacts on air quality. Obviously, we now know the issues with global warming potential, therefore, we are shifting to the next generation of materials to be able to continue to make those gains on air quality while reducing our impacts on climate change. So, that's not to say that-- Again, we don't regulate by a class; I'm not saying that. But, you have a little more targeted (indiscernible) molecular formula here of one carbon that's fully fluorinated.

Beyond that, we also want to thank you for the extension of the two years for the reporting deadline. Our members are ready to comply with that, from what we know is intentionally added into the ingredients. You've heard from some of the previous presenters today, "Do you know what's in our product?" The challenge isn't what is intentionally added, the challenge is what is not intentionally in there. Is it coming from the water system? Is it coming from manufacturing processes that are so small in there that-- Yesterday's analytical techniques were not able to measure it, but tomorrow's are, and that's the concern there is -- how do we report something that we can't test for today?

And, that's also something that I want to talk about, is from testing standpoint, the science isn't there yet; it's still developing. We're seeing it play out in the media right now, the debate between academics and

EPA on how do you test these things? Using the same analytical instrumentation but different sample preparation. EPA came out with a report earlier -- or, last week now -- discussing how their sample preparation resulted in not being able to detect PFAS, whereas a more, I'll say simpler methodology that was based on solvent and water extraction, shared that they *did* find PFAS. Now, that's not to say that one is right, one is wrong; and, EPA is not claiming that the academics necessarily did anything wrong there. But, it's showing that not just the instrumentation but sample preparation has to be taken into account. We need to have validated methodologies for all of these things, and it's not just going to be one solution across every spectrum. It's going to take time for the testing, and that's something we want to convey here.

So, with that, I'm happy to take any questions.

Thank you for your time.

SENATOR GREENSTEIN: Any questions?

MR. GRAZIANO: Yes, I just want to stress that we're just concerned that the current language as-is could limit access to certain products. And, many of these products could have positive environmental impacts as opposed to the negative ones that have been spoken about.

SENATOR GREENSTEIN: If you could get us (indiscernible), I know (indiscernible) Are there any specific concerns?

MR. GRAZIANO: We do have written testimony that we will be providing the Committee members and staff.

SENATOR GREENSTEIN: And, we know we (indiscernible) in addition, we did take at least one of your big suggestions, besides the ones you talked about.

MR. GRAZIANO: Absolutely, we recognize that your work with some of these amendments -- the two year, the extension, the (indiscernible) exemption, as well as the pharmaceutical, have all been-- We really appreciate it, ma'am.

Thank you.

SENATOR GREENSTEIN: Thank you, thank you.

The next person is Mike Egenton, Ray Cantor, Hilary Chebra, Mary Ellen Peppard -- any or all of those people -- for the Food Council, BIA, State Chamber of Commerce, and Southern New Jersey Chamber of Commerce.

And, they are seeking amendments, so if you could briefly tell us what those are.

M A R Y E L L E N P E P P A R D: Mary Ellen Peppard with the New Jersey Food Council.

Thank you so much, Senator, and I really appreciate your work and your staff's work and the conversations we've had so far on this bill.

I'll just-- For the other Committee members that may not be aware, that we haven't had conversations with yet, the food manufacturers are in the process of transitioning out of -- intentionally -- out of PFAS, and testing alternative packaging.

And, we are seeking amendments that would clarify certain provisions and mitigate some of the other requirements, which my members have said just aren't feasible, unfortunately, to implement.

One of the main concerns that we have is with the notification requirements. We certainly appreciate the extension, the one-year extension for the timeframe. But, my members have indicated that the requirements

pertaining to the submission of the exact quantity of PFAS -- this is very difficult. Often, food manufacturers don't actually manufacture the packaging as well. In some cases they do, but, in a lot of cases, the food is manufactured separately than the packaging. And, in these cases, they don't have access -- the food manufacturers don't have access, the brand owners, to the quantity amounts.

And, I also understand that not all substances -- not all substances have chemical abstract registry numbers, so that would obviously be a significant challenge. There doesn't appear to be an adequate number of lab facilities to test for every single product for every company. But, I would like to reiterate that our members are, at least with testing and transitioning to alternative packaging. But, it does take a long time -- in some cases, it does take years, because, as with all sort of food packaging, challenges, and issues, once you find an alternative package that works for one product, it doesn't necessarily mean it will work and be durable and appropriate for food safety for another product.

One of the other areas of concern -- or we would be seeking more clarification -- would be about the scope of the packaging ban, and some of the definitions. One of the definitions that I think we're struggling with in terms of intentionally added, and it talks about the degradation of byproducts, so we're not really clear on what that means in terms of the scope of packaging; we're not sure about secondary and tertiary packaging, or whether it's just food-contact packaging. So, we would love to have some more clarification on those pieces.

And, then, one of the other areas we would like to request is a "sell-through" period for products that are already in inventory, upon the

effective date of the bill. Because what we would hate to see happen is products have to be pulled from the shelves and discarded -- obviously that's food waste, that's packaging waste.

And, then, the final area, I'll just touch on, is the registration fees. And, we think, but we would like to request confirmation, that the thousand-dollar registration fee is per manufacturer, not per product. Many manufacturers may produce hundreds of thousands of products.

One of the amendments allowing DEP to modify the amount of the fees -- we would request removal of that amendment, because it would be challenging if the manufacturers just don't know what those costs are going to be.

And, I'll just end on saying that I certainly appreciate your deliberation, Senator, on this bill and taking your time to have these discussions. I think one of the other witnesses talked about Maine had enacted some PFAS legislation last year. They are in the process of finalizing some clean-up bills, because they don't feel that they got it right the first time. DEP -- the main DEP had to issue over 2,400 extensions to companies that couldn't meet the reporting requirements.

So, I think these are just things to sort of keep in mind as we progress with our bill.

And, thank you again.

SENATOR GREENSTEIN: One of the things that I remember from our earliest discussion -- you had a few people from your group on there -- was the fact, not only that you said you're really trying to do away with PFAS in your packaging products, as you said today, but also that the only product that it was still in was microwave popcorn for some reason.

Is that true that it's pretty much out of most products at this point?

MS. PEPPARD: I think it is out of most products. I don't want to say for sure it's only microwave popcorn. I think pizza boxes possibly as well.

But, I think part of it would depend on what that scope looks like. For example, I think one of the areas that we talked about -- and, this is where our brand owners don't have sort of control over this -- if you're talking about, for example, the equipment and the processing and there may be lubricants used, and plastic packaging to prevent the product -- the packaging from sticking during the manufacture, it's sort of -- that doesn't come into direct contact with the food, like, what does that sort of -- is that captured under the bill?

And, I don't know that that's clear. So, I think it's not intentionally added into the final product. And, certainly, I think almost all products -- is my understanding.

SENATOR GREENSTEIN: I do feel, given that you have worked so hard to get it out of so many of your products, that it may not actually be too difficult to come to an agreement on that -- some kind of an agreement.

So, we'll have to talk again and see where you are with the bill, and what you're specifically looking for. But, it does seem like you have made a lot of progress in getting rid of that chemical -- the chemicals -- which I think is good and commendable.

MS. PEPPARD: Thank you so much.

SENATOR GREENSTEIN: Who wants to be next?

M I C H A E L E G E N T O N: I'll go.

Thank you, Madam Vice Chair.

Mike Egenton, New Jersey State Chamber of Commerce.

I'll also reiterate just some quick points that Mary Ellen pointed out, but also point out I want to thank you for the work that you've been doing, working with the various stakeholders. I know we're all part of a coalition working collaboratively with the members, and our friends and colleagues at the Chemistry Council are trying to find some solutions, and thank you for the changes that you've made.

Just to reiterate, one of the things-- Mary Ellen pointed out the products, getting some clarification on it. I know if Chairman Smith was here, any issue that lately we've seen before the Senate Environment Committee always comes to, "How is DEP going to manage this?" and "Do they have enough staff?" and so on. You know, the stress factor. And, trust me, I know how much DEP and BPU and the other agencies are dealing with these days, so that's something to think about it.

SENATOR GREENSTEIN: I do want to say, although the Commissioner couldn't make it here today, they are, in general, supportive of the bill--

MR. EGENTON: Right.

SENATOR GREENSTEIN: --and think that it is something they can do.

They work mostly on the water aspect of PFAS, and the pollution there, but they understand this one is about consumer products, and they seem like -- I won't put words in their mouths -- but they seem like they're supportive of it.

MR. EGENTON: No, look -- respectfully, I get that.

It's just that, in totality, as we look at all these different issues -- air, water, site remediation, solid waste, everything -- the Department is challenged with meeting deadlines on a litany of issues. This is something I wanted to point out.

Being the State Chamber of Commerce, I am always concerned about, how does this define and play out when you talk about companies in general? They have a lot of proprietary, sensitive information in their processes and everything, and our concern would be how much and what specifically, information, would they have to disclose, be out there and everything. I mean, this goes back to the beginnings of manufacturing that started in Paterson, New Jersey, about Macy's versus Gimbels and the like. So, these are things that the private sector is always interested in.

Just to wrap it up, we want to continue to work with you. Again, we appreciate the changes you've made. Please give a continuing ear to our friends at the Chemistry Council. They brought a lot of people here today also from out of state as well. And, I know you gave some time to some folks virtually, and they're still here, so please give them the attention that they well deserve.

Thank you, Madam Chair.

H I L A R Y C H E B R A: Thank you, Madam Chairwoman.

Hilary Chebra, Government Affairs for the Chamber of Commerce Southern New Jersey.

I want to echo a lot of the comments that my colleagues made as well -- my colleagues from the Chemistry Council. We are seeking amendments; we are seeking that change for the definition of PFAS, and we

do appreciate the amendments that you've already made and your willingness to work with all of the stakeholders on this legislation.

Because, as we've heard before from previous testimony and folks at this table, other states that have done this have had to go back and revisit and a lot of exemptions were having to be made in Maine for the reporting requirements, as well as exemptions for small businesses. So, we want to keep those in mind and keep that in mind as we go forward with these conversations.

We appreciate that this is for discussion only, and that you've been very open to continuing this as we move forward. As my colleague, Mike, said, we want to ensure that there's language to protect intellectual property and trade secrets. Like you said, this goes all the way back to early manufacturing, and we want to make sure that those are protected.

So, I appreciate your willingness to continue the dialogue.

SENATOR GREENSTEIN: Thank you. Thanks.

Ray?

R A Y M O N D C A N T O R, ESQ.: And, thank you, Madam Chair.

My name is Ray Cantor, I am with the New Jersey Business and Industry Association.

First, I do want to thank you for the changes that you've made so far, and for working with us. We appreciate that this bill is up for discussion only today, and that we have more time to work our amendments.

Having said that, we have concerns with this type of legislation moving forward. I don't want to talk specifically-- OK, we support what was said, we support the Chemistry Council's amendments. I just want to talk just in general about what happens when the Legislature enacts broad

legislation with potentially unrealistic deadlines and burdens on a department that can't be met.

By the way, I'll just mention that four years ago, we passed -- or, you passed -- legislation on public access. Those regs aren't even proposed yet. So, I get that the Commissioner may be generally supportive; there is limited capacity over there to do certain things.

But, again, there are impacts of all the laws that the Legislature passed, no matter how well-intended. And this bill, particularly, impacts the manufacturing industry.

I just want to talk about manufacturing for a second. New Jersey Business and Industry Association was founded on manufacturers. It's what we're all about; what we've been about for over 100 years. Mike mentioned Paterson, New Jersey. New Jersey is the birthplace of manufacturing in the United States. As a matter of fact, it was still significant in the state: 9.47% of our state's output comes from manufacturing, and 6.2% of our workforce equates to $60.5 billion in total output. The average manufacturing job is $105,000. They are a more diverse workforce than other industries, and you don't necessarily need a four-year job (*sic*) to go in manufacturing. And, we still have 236,000 manufacturing jobs in the state. We need to be cognizant of that, and make sure that we don't do things that are unnecessary, that may not have -- maybe unnecessary to get our intended ends, but by doing things that will impact this industry.

In 1990, we had over 500,000 jobs -- manufacturing jobs -- in New Jersey. Since then, we have lost 291,000 of those jobs, and a lot of that is not just because jobs have gone overseas; it's because of the actions, the laws, the regulations that the Legislature and DEP and other agencies have

passed. And, I say that because, again, the nation as a whole has lost manufacturing jobs, but nationally, we have lost 1.2% of manufacturing jobs per year since 1990. In New Jersey, we have lost 2.6% of our jobs, manufacturing jobs, per year. So, we're more than double the national rate of losing manufacturing jobs.

There's got to be a reason for that, and I think part of the reason is we pass laws that are overly broad, and they never go away. We could all talk about laws that were passed in the '70s, '80s, and '90s that are outdated, but the Legislature doesn't go back and re-look at those laws and pull them back.

So, again, we would just ask that you be cognizant of the impacts on manufacturers, listen to the amendments, and -- again, I don't want to get into science or chemistry -- but just because something is in a product doesn't mean it's a health impact. Just because-- Everything is a matter of dose and ingestion, not a matter of what people from out of state claim are health concerns.

So, we thank you for working with us, and we look forward to continued dialogue.

SENATOR GREENSTEIN: Thank you.

And, I would ask if -- it does say here, "Seeking amendments." If you could submit any additional ideas or amendments in writing, that would be terrific.

Does anyone have any questions here?

MR. EGENTON: Madam Chair, just to that point, to make it easy -- as I said, we're all in a coalition working--

SENATOR GREENSTEIN: You can submit one set, but just tell me what it's for--

MR. EGENTON: We're all on the same page, right--

SENATOR GREENSTEIN: Yes.

MR. EGENTON: Thank you.

SENATOR GREENSTEIN: OK, thanks.

Now, I'm going to have to do what I don't like to do, but I have to do: put a time limit on, because we still have a lot of people. So, I'm just going to call on people, and I would say three minutes a person. We'll see how it goes.

OK, here I have Atashi Bell from Honeywell, seeking amendments.

Atashi Bell, thank you.

And, what I'm going to ask you, since we have three minutes here, just let me know what the amendments are that you're seeking, that would be great.

A T A S H I B E L L, Ph.D: Thank you guys so much.

So, first off, thank you to this Committee for this opportunity to testify today.

I am Atashi Bell with Honeywell. I have a Material Science Ph.D., so I am a trained scientist but also a regulatory professional, but I also work in our Government Relations shop.

As a company, Honeywell is very deeply rooted in the safety of our customers as well as our employees, their families, and the communities in which we function. As such, we strongly support New Jersey's efforts through S3177 to establish a source-reduction program specifically for PFAS

materials that, through risk assessments, have shown to have negative impacts on human health and the environment. We also support alignment with a science and risk-based definition that is being employed Federally through the U.S. EPA's Toxic Substances Control Act, as well as the National PFAS Testing Strategy that the U.S. EPA has proposed.

I think this point has been raised a couple of times. What makes this challenging, however, is that the definition that is currently being proposed through S3177 is inconsistent with the Federal definition that is currently being looked at, and that is going to end up, perhaps, causing a lot of compliance challenges for the regulated community as well as a lack of clarity specifically around which compounds are most critically of concern for the remediation purposes for the State.

Morris Plains, New Jersey, specifically, is home to our advanced materials business at Honeywell, and it is approximately 700 employees. Many other technologies that are essential have been researched and developed, including HFOs -- or hydrofluoroolefins for short. Under S3177 as currently drafted, HFOs would be, unfortunately, included in the State's definition of PFAS.

So, just taking a step back, what exactly are these? I know they've mentioned a couple of times today, and why they're so important from not just the State perspective but also Federal perspective as well as global perspective. HFOs are very innovative gases. They were developed to replace really high global-warming gases. So, a lot of our air conditioners, air conditioners in our cars; they're used in spray foam, if you will. So, from the perspective of what these products are used for, they are non-ozone-depleting, they are non-toxic, they are non-bioaccumulative, and they

degrade in the environment in a matter of days, unlike what I think a lot of the traditional PFAS chemistry that we are discussing today are for.

They're also very essential for meeting our climate goals. To date, Honeywell's HFOs have helped to avoid the potential release of close to 329 metric tons of Co2e in the atmosphere. What does that really mean? It's close to 70 million gas-powered vehicles per year that we've taken off the streets by using these gases. So, pretty significant if you think about it in terms of the sustainability impacts we've had.

We also heard some concerns, I think, from the predecessors, that these gases were perhaps unsafe or being brought into market without the regulatory regime taking a very close look at it. And, I just want to say that that's categorically untrue -- they're very heavily regulated materials, pursuant to the U.S. EPA's Clean Air Act and other environmental programs -- namely, EPA has a program called The Significant New Alternatives Policy Program, or the SNAP program, in short. This is essentially a program that looks at--

SENATOR GREENSTEIN: Could you wrap it up, please?

DR. BELL: Sure.

SENATOR GREENSTEIN: Thank you.

DR. BELL: -- gases every year, essentially.

To come back to the point that you made earlier, Senator, we are specifically looking for an exemption for HFO gases to effectively craft a balanced science-based policy, pursuant to U.S. EPA's SNAP program under the U.S. Clean Air Act. And, with the policy definition, that essentially aligns with the Federal approach, if you will.

That's it. Thank you.

SENATOR GREENSTEIN: Thank you.

Questions? (no response)

OK, thank you very much for your testimony.

DR. BELL: Thank you.

SENATOR GREENSTEIN: I appreciate it; thanks.

OK, the next person I'm going to call is Andrew -- is it Beam-us -- From SPAN -- Sustainable PFAS Action Network. Seeking amendments.

So, you have three minutes. Let us know what they are.

A N D R E W B E M U S: You got it; that's how you pronounce my name, very good.

Vice Chair Greenstein, members of the Committee, thank you very much for your time today.

My name is Andrew Bemus with the Sustainable PFAS Action Network.

SPAN is a coalition of PFAS users and producers who are committed to sustainable and risk-based solutions for PFAS management. Our members advocate for responsible policies that assure long-term human health and environmental protection while recognizing the critical need for certain PFAS materials in the modern 21st-century economy. We are committed to working with legislators to find a sustainable and effective program for PFAS management in New Jersey, and recognize the importance of identifying and remediating contaminated sites.

This is a complex issue, and we appreciate the Committee hosting a discussion-only hearing to think through the right elements of this legislation.

SPAN is also involved -- been involved -- in a number of other states -- Minnesota and Maine as has been mentioned. That's been a very collaborative process that we're very proud of and is ongoing and we look forward to beginning that here in New Jersey.

Over 10,000 compounds would be included as PFAS under the legislation's current definition -- only a portion of which are used in commerce. Any PFAS-management program must be targeted at commercially active compounds that pose the greatest risk to human health and environment. We want to work with you and the Federal government to do that.

We strongly support 3177's provisions establishing a source-reduction program, and we think these provisions can be made even stronger. However, other provisions of the bill are very broad and will encourage non-compliance, overwhelm regulators, and not do enough to address contamination issues. The right definition of PFAS is essential and should be narrowed to more accurately reflect the nature of PFAS usage in the economy.

Defining PFAS as two fully fluorinated carbon atoms will help New Jersey employers comply with the statute, and regulators more effectively identify compounds responsible for contamination issues. The U.S. Environmental Protection Agency, as well as other states such as Delaware, Virginia, and West Virginia, have adopted narrower definitions that effectively target high-risk and high-emissive compounds.

Overall, PFAS management is best led through a uniform, Federal approach. The U.S. EPA is currently undergoing rulemaking for a PFAS reporting program, with final rules expected later this year. PFAS

remediation will take decades to complete successfully, and any New Jersey program must take into account this length of time and potential cost of the program.

In a notice published last November, EPA announced that they were increasing the estimated social cost of the forthcoming TSCA Section 8 PFAS reporting rule from 10.8 million estimated in 2021, to 875 million. SPAN strongly encourages postponing the notification program until after a final promulgation of the forthcoming EPA reporting rules. This will ensure that New Jersey does not duplicate the costly Federal program or embark on duplicative regulations.

Recent draft amendments on 3177 are very productive steps forward, and indicate the Committee's willingness to collaborate on responsible solutions, establishing preemptions for products regulated by the Federal Food, Drug, and Cosmetics Act, as well as the Federal Insecticide, Fungicide, and Rodenticide Act -- and, also, FDA and the Department and Agriculture are very key inclusions.

Vice Chair Greenstein, we've provided to your office, and would just like to reiterate today, that in keeping with this precedent, we would also encourage exemptions for compounds approved under other Federal processes such as the Clean Air Act, the Toxic Substances Control Act, the Safe Drinking Water Act, and others that have been amended and updated since their passage. This ensures that compounds entering the marketplace have been thoroughly tested for contamination potential, and their regulators are not burdened with regulating compounds that have already been tested at the Federal level.

Briefly, if I could address the Federal process, since it's been discussed a little bit today, there is quite a bit going on. SPAN has been working closely with some representatives in the Senate Environment Committee and others to--

SENATOR GREENSTEIN: Could you begin to wrap up?

MR. BEMUS: Sure, of course.

We're working with the Federal government to identify essential uses and come up with a process for doing so.

So, we strongly encourage the consideration of these issues, and we look forward to the continuing dialogue we've had with the bill sponsor's office and others within the Committee.

Thank you very much.

SENATOR GREENSTEIN: Thank you. Any questions? (no response)

Thank you so much.

MR. BEMUS: Thanks.

SENATOR GREENSTEIN: I appreciate it.

OK, next, I'm calling Anjuli Ramos, New Jersey Sierra Club -- in favor.

A N J U L I R A M O S: Good afternoon, Senator.

Good afternoon, my name is Anjuli Ramos, New Jersey Director for the Sierra Club, and I am here in support of this very necessary bill.

Thank you for your leadership, Senator Greenstein. I know this is a very difficult topic, and one that affects many types of industries not just in New Jersey, but nationally.

As I mentioned before, I am the Director for the Sierra Club, but, before that, I used to work for the New Jersey Department of Environmental Protection, where I did a lot of work on PFAS, particularly in the air, and understanding our inhalation exposure to these substances. I am also a chemist, and one who urges a more effective regulation of PFAS in the state -- and, that includes a definition that is inclusive of at least one fully fluorinated carbon, as it has been discussed quite a lot today.

In my experience as a regulator and researcher, the biggest challenge was not understanding the very complicated fate and transfer of these chemicals in our environment or in our systems. There's *always* the lack of data. The lack of transparency that PFAS manufacturers carry throughout their operations, products, and discharges to the environment; the lack of willingness to provide data to the State agencies so that those who protect this state's public health could actually evaluate and determine the communities and individuals at risk.

PFAS are everywhere, including our blood, and there is no control of how much is put on products or even what type of products. There is PFAS in women's sanitary products. The New Jersey DEP has a lack of regulatory power over PFAS because of two main reasons: The nature of the contaminants. They're considered emerging contaminants, and, even though many of us here know that manufacturers have been using these for decades, and because of -- you guessed it -- lack of data, it's very difficult to regulate something that you don't know where it is or how much of it is in the environment.

This bill is incredibly necessary. PFAS are a diverse family of chemicals used in hundreds of consumer products. Nearly every American

has the chemicals (indiscernible) in their bodies, including umbilical cord blood and mother's milk. Exposures are highest for newborns and young children. Personally, given my professional experience with PFAS and the knowledge that I have as a chemist, I am constantly thinking of my own exposure as well as my almost 2-year-old son's exposure to PFAS. I try to avoid (indiscernible) products with PFAS as much as I can, and I have a reverse osmosis filter at home, but that just doesn't cut it.

New Jersey has grappled for decades with the legacy of PFAS pollution from primary manufacturing sites -- and we have many of them -- as well as more generalized pollution of rivers, wastewater, soil, and food crops originating from the widespread use in household and industrial products.

This bill is an important first step to limit uses of PFAS chemicals in common consumer products. It identifies product categories where alternatives do exist, and where other states have identified safer alternatives in or taking statutory action to ban PFAS in products. A registry will track the ongoing uses of PFAS in other types of products, enabling state regulators to identify other meaningful ways to prevent costly pollution. The bill would authorize critical funds to help the State; scientists to gauge the burden of PFAS in our environment, because we still don't have the full picture; and protect New Jerseyans from further harm.

We strongly support S3177, its PFAS definition, the banning of consumer products, and the resources to be provided to the New Jersey DEP to be able to do its job. This bill is a necessary step to get a hold of the widespread PFAS contamination in the state, but also, most importantly, to protect our health and our children.

We look forward to continuing working with you, but I also want to add that the problem with resources for the DEP just gets solved by giving the DEP more money. And, it would also benefit the DEP if they don't have to spend so much energy fighting with manufacturers for the lack of transparency of data, and then just focus on utilizing that data and understanding what the true problem is. That's how you fix a problem.

Thank you.

SENATOR GREENSTEIN: Thank you very much.

Any questions? (no response)

Thank you so much.

Next, I have Doug O'Malley, Environment New Jersey -- in favor.

D O U G O ' M A L L E Y: Thank you so much, Senator Greenstein; thank you to members of the Committee.

I know we're three hours into the Committee. This is a long-- This is incredibly important, though, and I just wanted to appreciate and thank you for your leadership, Senator Greenstein, for the work of, of course the last year; the invited speakers from far and wide; and, obviously, the folks who have been in front of you in the last few minutes.

I serve as the Director of Environment New Jersey. I did want to highlight that we, obviously, we've been inside for three hours at least, right -- we know we cannot go outside and breathe the air at healthy levels. When you take a drink of water here in the state, you usually do not taste PFAS in it. And, that is why it's so critical that we have the strongest possible standards to move forward on source reduction. And, that's why we strongly support this bill right now.

I think it's critical to know that here in New Jersey, we are not-- We are uniquely vulnerable. We have some of the highest levels of PFAS contamination in our drinking water. Obviously, DEP is not here; I want to directly thank the work of the New Jersey Drinking Water Quality Institute and DEP, including former Commissioner McCabe, for the groundbreaking research in 2016 and 2017 -- that started *years* before that, by the way -- to talk about the health impacts. At that point, EPA had a health protective level that was 70 parts per trillion; it was not health protective. EPA is now doing the right thing, but it's partially because states like New Jersey were leading the way.

And, when we think about why that happened, that's because it goes back to 2006, for PFAS being found in drinking water in Penns Grove; In 2013, Solvay in West Deptford was linked directly to PFAS contamination. There's natural resource damage litigation that's occurring, that was filed three years ago by DEP targeting Solvay, and specifically looking at the impacts in Paulsboro. There's a national health study going on in Paulsboro being led by Rutgers University to test blood samples to figure out PFAS contamination in our blood. We should not, obviously, be experiments.

And, I want to highlight, too -- and, Senator Smith highlighted this -- that litigation, NRD, the most important thing that is happening right now in PFAS beyond the action of EPA is the litigation, the settlements on the court -- you know, the courtroom steps. Those are significant. The settlement just happened earlier this month with DuPont and Chemours and another chemical company -- that was for $1 billion. And, that sounds like a lot of money, but 3M just announced it was going to settle for $10 billion,

and has acknowledged that it has a risk of $140 billion. 3M also -- and, this is critical for the bill -- 3M also said they are going to remove PFAS from the manufacturing processes, and work to remove it from the products by 2025 -- that's two years from now.

So, obviously, great to have Beautycounter here to talk about what they're doing. It's a reminder that companies that are under the litigation gun are also changing their business practices, and that's why, obviously, New Jersey needs to change its practices. There's a fire bell on our faucets right now, and it is going off.

And I wanted to thank you, Senator, because this bill will help to lead the way. You're hearing, obviously, a lot of push for amendments -- we would encourage this bill not to be watered down, for the definition of PFAS to stay where it is; to maintain that two-year timeline, which has already been extended.

And, then, I do want to acknowledge there's $5 million in the bill. There's been some conversation about whether DEP has the resources. If there is adequate concern, we would encourage there be increased funding for DEP to be able to implement this bill.

Thank you so much.

SENATOR GREENSTEIN: Thank you very much.

Any questions? (no response)

Thank you very much, Doug.

OK, Eric Benson, Clean Water Action -- in favor.

E R I C B E N S O N: Thanks, Senators, it's been a long morning; I will be brief.

Not surprised -- no, I am surprised, but I'm not disappointed that microwave popcorn has already come up in today's discussion. In 2006, I worked on a popcorn campaign writing letters to the CEO of Orville Redenbacher, "Please remove this from your products." So, this has a long history for me personally and professionally.

New Jersey is ahead of the curve, having a drinking-water standard and removing PFAS from our drinking water -- which is great. But, it's a toxic legacy that requires us to eliminate the source. Clean Water Action -- you heard my Minnesota colleague who is part of a safer states movement -- remains focused on the fact that so many consumer products, including water and stain-resistant clothing, contains PFAS chemicals that are harmful to the health of humans and the environment.

The classes of over 12,000 chemicals are linked to kidney and testicular cancers, high cholesterol, and impaired immune function. They don't break down; they're persistent, so they get into source water, groundwater, and surface, all over the country. Individual actors -- McDonald's, Burger King, Walmart, Lowe's, Patagonia, most recently REI -- are committed to removing PFAS from their textiles, home furnishings, and other outdoor apparel and food packaging. They have shown it is possible, so we can and should be doing more, so we are fully supportive of this legislation.

Thank you for your leadership.

SENATOR GREENSTEIN: The next person I have is Ryan Berger. It does say, "no need to testify," but you say that you're seeking amendments.

Can you very briefly, like in a minute or so, tell us what the -- if you're here. Is Ryan Berger here? He might not be here.

Is Ryan Berger here?

OK, what group are you with? Oh, New Jersey SEED.

Can you very, very briefly tell us what amendments you're seeking?

R Y A N B E R G E R: I am going to make it very brief, as I did put on the note that we are along with the Chemistry Council of New Jersey on--

SENATOR GREENSTEIN: You're in agreement with what they spoke about?

MR. BERGER: Yes.

SENATOR GREENSTEIN: OK, so, that's fine.

MR. BERGER: That's pretty much it.

SENATOR GREENSTEIN: I thought you might have some additional amendments, but, if you don't, don't worry.

MR. BERGER: Absolutely; thank you.

SENATOR GREENSTEIN: Thank you very much. Thank you.

OK, Allison McLeod, New Jersey League of Conservation Voters -- in favor.

Hi, how are you?

R E B E C C A H I L B E R T: Hi, I am actually Rebecca Hilbert, I am the Senior Policy Manager with New Jersey League of Conservation Voters. I am filling in for Allison, as she had to run to a different meeting.

But, we want to thank Senator Greenstein with everyone else for your work on all your PFAS legislation that's been moving.

This really could be the crown jewel. All the other bills are a lot about remediation, which is great, but this bill really does help stop it at the source, which is extremely important.

I echo a lot of my colleagues' concerns and motions of support, and I just want to say that I am not going to reiterate all the health concerns that we heard today, or exactly everywhere PFAS are found. I think we've heard enough of that.

But, I do want to say that the ask of this bill is not unreasonable. We're not requiring manufacturers to remove all PFAS out of every product. There's a difference between adding PFAS on purpose and remediating the ones that are occurring organically from cross-contamination.

So, we also want to stress that this is not uncharted territory. We heard today that 12 states, including Maryland, have enacted phase-out in food packaging, on carpets and rugs; Colorado is getting it out of indoor and outdoor furniture; California is phasing PFAS out of children's products. What we really want to stress is that we don't want New Jersey to fall behind on health. New Jersey has always been a leader; we don't wait to see what other folks are doing, we lead, and we want to keep that here. We may use these chemicals in our home products for just a few minutes, but they live in our air, they live in our water, they live in our bodies for decades -- for forever.

So, we urge you to discuss and vote yes when the time comes on this bill.

Thank you.

SENATOR GREENSTEIN: Thank you so much.

Questions? (no response)

Thank you very much. Thank you.

OK, Andy Hackman, I think it says Ameri-par, or Ameri-plan -- I can't read.

UNIDENTIFIED SPEAKER: Ameripen.

SENATOR GREENSTEIN: Ameripen? OK, it says no need to testify, but seeking amendments.

Are you here, Andy? (no response)

You're not -- OK. I just, I like to know what the amendments are, which is what I'm checking.

OK, I have no name, but it says "Flexible packaging." Again, no need to testify -- seeking amendments.

Is the person here from that group? From flexible packaging? Anybody? (no response)

The next one says "Juvenile Products Manufacturers." Again, no need to testify -- seeking amendments. Is someone here from Juvenile Products Manufacturers?

OK, Roxy Kozyckyj and Amanda Hagan, Advanced -- no, AdvaMed, AdvaMed. It says seeking amendments.

R O X Y K O Z Y C K Y J: I have a copy of our written testimony that I can just hand out here.

SENATOR GREENSTEIN: OK

MS. KOZYCKYJ: I also have sent that along yesterday.

SENATOR GREENSTEIN: Thanks.

MS. KOZYCKYJ: (Indiscernible)

SENATOR GREENSTEIN: Now the amendments that we made were in favor of a group like yours. Did you like those amendments?

MS. KOZYCKYJ: Yes, it's just some technical fixes; wording. But, intent and content is pretty much -- yes, (indiscernible) thank you.

SENATOR GREENSTEIN: It's always good to please some groups.

MS. KOZYCKYJ: No, yes, thank you. We're just here-- So, my name is Roxy Kozyckyj, I am the Director of State Affairs at AdvaMed. We're the advanced medical technology association--

SENATOR GREENSTEIN: Make sure your red light is on (referring to the microphone).

MS. KOZYCKYJ: Oh.

SENATOR GREENSTEIN: Press the button.

MS. KOZYCKYJ: There we go, OK.

I'm here with AdvaMed, the Advanced Medical Technology Association. We represent over 400 med-tech manufacturers; diagnostics; digital health manufacturers with a very large and proud presence in New Jersey.

So, I'll be brief, just because we are running up against time. We support the amendments that have been included that exempt medical devices -- FDA-regulated medical devices and medical products. We just have some technical fixes and some wording that we've included in the written comments that we -- that I sent along, and also distributed.

And, so, as has been said before, earlier, Minnesota just enacted a very broad-based PFAS law, and we are exempt from that, so I think that is kind of telling that leaving it up to the agency level for essential products that are heavily regulated, like FDA products, like insulin pumps, pacemakers,

mammography machines, catheters, etc., should be more explicitly put into the law. So, we're very happy with where the amendments are going.

And, again, just want to keep working with the Committee, with you, and with the other co-sponsors, and I'm happy to be a resource and answer questions. And, that's it.

So, thank you.

SENATOR GREENSTEIN: Did you have anything to add?

A M A N D A H A G A N: I'll just say I'm Mandy Hagan, I'm with the Animal Health Institute.

Our members make animal medicines like flea and tick collars, oral treatments -- really, we signed up to testify together because we have the same, pretty much, position, that--

MS. KOZYCKYJ: And, we have overlapping members, too.

MS. HAGAN: (laughter) State-regulated, EPA-registered, and USDA-regulated products should be carved out, because it's a misconception that every product that has a fully fluorinated carbon atom is inherently dangerous. Our products are rigorously tested; there's no need to lump them in with what the department will be looking at.

So, thank you for the amendment that you drafted. We appreciate you working with us. Your office has been great, and we support the amendment that you've put in.

Like Roxy, we have some minor things. Like, it should say "EPA registered," not "EPA approved." We'll send you those suggestions and look forward to working with you.

SENATOR GREENSTEIN: Thank you. Just put any ideas in writing and send them to us. Thank you very much.

MS. HAGAN: OK, thank you.

MS. KOZYCKYJ: Thank you.

SENATOR GREENSTEIN: Appreciate it.

Next I have Shawn Swear-in-gin, maybe, and Ed Waters, also American Chemistry Council.

It says here "seeking amendments." If you just want to let us know what the amendments are.

Thank you.

S H A W N S W E A R I N G E N: Thank you, Chair.

Yes, Shawn Swearingen; thank you again for the time to be here today. American Chemistry Council Director for the Alliance for Telomer Chemistry Stewardship.

And, I really want to thank you again for all the meetings that we've had through the process since the bill was first introduced.

So, we are seeking amendments, and we've supplied those, and we can update with the amendments that you have, to date, to make sure we're all in alignment there.

There are a couple of things I just want to point out that weren't covered already. Several other statements here today by those members of the coalition certainly agree with testing methods, but I really want to hit on the point of the definition as well, that not all PFAS is the same.

Like I mentioned, the Alliance for Telomer Chemistry Stewardship, we really focus on the telomery (phonetic spelling) aspect of the broad PFAS family of chemistry. You know, telomers, for instance, are used-- They're being phased out of food packaging, I know that was touched on today. But, they are essential components of medical garments; hospital

gowns; drapes; divider curtains to create a barrier that provides life-saving protection against diseases and illnesses.

Another type of PFAS, fluoropolymers -- which, I know they have written comments in today as well -- they were integral to the COVID-19 testing equipment, and the medical technology of those life-saving and saving lives across the globe. And, I know we have the medical in here, too, but I just wanted to use that as an example.

Again, I want this on record, too: The chemical industry supports a comprehensive approach to managing per- and polyfluoroalkyl substances that helps ensure the protection of human health and the environment. This includes appropriate science-based policies and regulations.

We touched on today, and we've had several people talk about Maine; we've also been working very closely in there since that bill was first introduced. Working collaboratively with stakeholders across the aisles and with bill sponsors.

One thing I wanted to point out is -- let me just get back to my other page. I'm just trying to hit the high notes for you, Madam Chair.

Senate Bill 3177, like the Maine law, is overly broad in scope, and will likely capture hundreds if not thousands of products -- most of which do not present significant risk concerns highlighted today by other testimony, rather than focusing on PFAS chemistries and products to present the greatest potential risk concerns.

Moreover, like the Maine law, Senate Bill 3177 will be enormously difficult to implement, and will pose unreasonable burdens on businesses and residents in New Jersey. I am happy to talk in future meetings

on some of those examples that we heard across those states in Minnesota, and in Maine.

We note, in this regard, that California did pass a similar reporting bill last session that was ultimately vetoed by Governor Newsom. The governor cited the steep burdens of (indiscernible), as well as redundancy with forthcoming EPA reporting regulations, as mentioned earlier today. And, these reporting regulations have been finalized and are currently with OMB under review and expect to be published within weeks. So, this is where ask--

SENATOR GREENSTEIN: Can I ask you to wrap it up?

MR. SWEARINGEN: Yes, I was just on my last line, to say thank you, and I'm happy to continue these conversations further.

SENATOR GREENSTEIN: Thank you. Thanks.

Ed?

E D W A T E R S: Good afternoon, Chairwoman Greenstein.

I just want to point to a letter that I submitted -- this is the most recent copy that I submitted today. I apologize; I sent multiple copies to you yesterday, but we have over 70 groups that represent pretty much every sector of the New Jersey economy, manufacturing, that are seeking common-sense amendments to this bill.

CCNJ supports measures to keep the public safe and our air and water resources clean for generations to come. We don't oppose this bill, but we're seeking common-sense amendments to address the issues that this bill is seeking to address, which is protecting against forever chemicals.

We appreciate the generous amount of time that you have afforded us to discuss our concerns, and our solutions. And, we appreciate

that some of the challenges we outlined were/are being addressed in the amendments -- specifically the (indiscernible) and the pharmaceutical, animal-health, and medical-device exemptions.

Unfortunately, we still believe this bill goes too far, and we believe our biggest concern in this bill as written is that PFAS is defined too broadly, and fails to recognize key environmental and toxicological differences in this broad family of chemistries.

There are over 9,000 PFAS substances, and not all are created equal. For example, fluoropolymers should not be in the scope of the bill, as they are a chemistry inert and critical to the functioning of modern society.

Second, the bill gives DEP unprecedented authority to recommend legislature, products, or categories of products with intentionally added PFAS that should not be sold or distributed in the State of New Jersey. This open-ended process will result in a significant chilling effect for much-needed domestic investment in critical product supply chains, and fails to provide solution providers and regulatory certainty to continue investing in the United States, including in New Jersey.

CCNJ believes we can achieve this goal -- the goals of this bill -- without negatively impacting the stream of commerce or putting new technologies at risk. This can be achieved by changing the definition of PFAS to two or more fully fluorinated sequential carbon atoms, excluding gases and volatile liquids. By changing this definition, we will still protect against forever chemicals without banning newer technologies which were developed to replace the older technologies.

We also need stronger language to protect intellectual property and trade secrets. And, this bill, unfortunately, is in direct contradiction with

several of the priorities that this Committee has been working on. For example, electric vehicles and hydrogen technology -- you can't have an electric vehicle without PFAS. It's engrained in both the electronic components, and in the battery technology. If the U.S. adequate domestic supply is not available for these components, EV manufacturers will be forced to rely on Chinese suppliers, which would threaten U.S. national security and economic competitiveness.

Over-broad PFAS policy also endangers critical hydrogen technologies from entering the marketplace and contributing to international environmental goals. As I mentioned earlier, fluoropolymers, a subset of PFAS, are vital to critical industries that are the foundation of our sustainable future, including hydrogen infrastructure, semiconductor manufacturing, and electric vehicles. Particular to hydrogen--

SENATOR GREENSTEIN: Ed?

MR. WATERS: Yes?

SENATOR GREENSTEIN: Can you begin to wrap it up?

MR. WATERS: Sure, sure.

SENATOR GREENSTEIN: Thanks.

MR. WATERS: So, we're concerned that some of the priorities that this Committee has are going to be set back by not having PFAS. They're important, and not every PFAS is created equally.

Any questions?

SENATOR GREENSTEIN: Thank you both very much for your testimony.

And, any additional -- I know we have info from you – but, any additional print amendments--

MR. WATERS: Sure--

SENATOR GREENSTEIN: --that you're suggesting--

MR. WATERS: --and, we look forward to continuing to work with you on this.

SENATOR GRENSTEIN: OK.

All right, now I am going to read off a couple here.

SENATOR STANFIELD: Senator?

SENATOR GREENSTEIN: Yes?

SENATOR STANFIELD: If I could just make a comment?

SENATOR GREENSTEIN: Please.

SENATOR STANFIELD: I just want to commend the Chemistry Council for pulling together this coalition. It's been very helpful for me to understand what's going on, and the impact on the business community.

Chairwoman, I want to commend you for listening and for being open to changes. That's what legislation should be, and I really appreciate your efforts.

SENATOR GREENSTEIN: Thank you.

SENATOR STANFIELD: We all kind of have the same goal: We want to get to a safe space, but we want to do it in a reasonable way, and, unfortunately, the Federal government is not taking the lead. I was happy to hear that they are working on some things with the EPA, because I don't want to see us with a patchwork of different definitions, different regulations, they just-- Because I don't see how businesses can work with that kind of environment.

So, hopefully, the talks will continue and we will be able to get to a bill that works for everybody, and for all our goals.

But, thank you very much, all of you.

SENATOR GREENSTEIN: I hope so, and I very much appreciate your comments.

And, I also agree the Chemistry Council has done a great job of getting it all together, and hearing some of the different views out there.

We're really trying to listen to what people are saying.

SENATOR STANFIELD: I can see that.

SENATOR GREENSTEIN: OK, just going to read off a few things, here: Tony Russo, Commerce and Industry -- it says no need to testify, seeking amendments, but seeking the same amendments as the Chemistry Council. So, I guess we'll know what that is.

Anthony Anastasio, Civil Justice Initiative -- opposed, no need to testify. Dan Moyor, Consumer Technology Association -- submitted written testimony, opposed, no need to testify. Wayne Weikel, Alliance for Automative Innovation -- opposed, no need to testify. Dennis Hart and Riaz Zaman, New Jersey Paint Council and American Coatings Association -- opposed, and it says seeking amendments.

D E N N I S H A R T: Good afternoon, Chairwoman.

Dennis Hart with the New Jersey Paint Council. I am here today with Riaz Zaman from the American Coatings Association.

I want to start off-- Perhaps I'm cranky from not having eaten anything yet today, but I want to echo my colleague, Mike Egerton *(sic)*, from the Chamber of Commerce, that we should-- There are a number of people who traveled here last night and today from out of state for today's testimony.

In the future, with OLS, if you're going to allow video testimony, it should be afforded to everyone to make life easier.

I want to start by saying fluoropolymer chemistry -- I don't want to repeat everything you've heard from today, but what we want to say is, I want to follow-up on what Chairman Smith started his testimony off with. He said that people were arguing that we shouldn't do anything; I have not heard one person, not one business, not one association, say we shouldn't do anything. What we're saying is, we should not do something that is so overly broad and so encompassing that it falls down under its own weight.

I watched the testimony for the State of Maine on that legislation; I watched the cleanup bill that they're working on; and I watched the regulations that they did public hearings on. And, contrary to some of the testimony, the State of Maine has created a catastrophe for themselves, and they're trying to figure out how to back themselves out of that, and untie the knots that they've tied themselves into.

For an example, the boat-building industry, which is very important to Maine, testified that in one small boat, there's over 9,000 pieces. How are they going to go and look at every one of those pieces and figure out which one has PFAS, which doesn't? Does that actually-- Does that product that has PFAS in it, is actually a risk to the environment? And, they're very concerned that it'll have a devastating impact to the boat industry. That's our issue.

In New Jersey, whenever there's major problems like this -- which is a major problem -- we take it and break it down into its parts that can be manageable, and we work towards the future. I'm old enough that, to me, the most impressive date in the New Jersey environment was July 1, 1988.

That was the secondary treatment deadline that over 200 municipalities signed consentive *(sic)* orders that most of the State was primary sewage treatment plant. We did not go from primary to tertiary treatment plants in one two-year period -- there was a process that was set out, we work on the goals, and we achieve them. And, I think that's what I think you're trying to do with that legislation, and to all of our partners, that's what we're encouraging.

Some specific things that haven't been talked about today -- Number 1 is proprietary information. This bill requires product manufacturers to submit detailed analysis of every product and the ingredients and the amounts that are in there. That is opening the door to industrial sabotage. Until the DEP is able to have a very encrypted data system, companies are going to be very reluctant to put in the formula for their products to make it open to the market. It's like asking Coca-Cola to submit -- write a letter and submit to the Department -- what's the ingredients of Coca-Cola. They would never do that; it's too risky for their business. And, this is a legitimate, very big risk. The Department would need to have a very encrypted data system for this. Two years ago, they asked for data for wastewater-treatment plants that had PFAS, and the data system they created was unmanageable and created a huge problem. So, they need a sophisticated program for that.

Secondly, they do not have the experience dealing with products. DEP deals with contamination, exposure. Dealing with products and product bans -- they're having a difficult time, from the Legislation that came out of this Committee on the polystyrene food container ban, the recycled content ban -- they're having a difficult time with those regulations, and now we're

going to pile something that they don't have the experience and don't have the, really, tens of tens if not hundreds of people they're going to need to implement this.

SENATOR GREENSTEIN: Dennis, can you begin to wrap it up?

Thanks.

MR. HART: I am, I am, Ms. Chairman.

We appreciate your history of working with everyone, and we look forward to this summer of meeting, having stakeholder groups, and really diving into this.

SENATOR GREENSTEIN: And, I did want to say -- I do apologize. We had a Zoom call with most of the people on there a few days ago, and realized that they had good testimony, and obviously, none of them could come, they're all over the place. So, we said, "Let's just do a Zoom."

So, it was a very last-minute decision. But, if you have people who would like to testify on this, on a Zoom, I can ask Senator Smith if we could do a--

MR. HART: I appreciate it, and I don't mean to be a horse's behind like I normally am, but I appreciate that.

Thank you, Senator.

(laughter)

R I A Z Z A M A N, J.D.: Good afternoon, Senator Greenstein and members of the Committee.

My name is Riaz Zaman; I am Senior Council with the American Coatings Association.

Our members manufacture paints, coatings, sealants, adhesives, and other formulated products. The American Coatings Association seeks amendments to S3177 due to unnecessarily broad reporting requirements that can result in non-compliance, even with good-faith efforts to provide information to the State.

As an industry that works downstream of chemical manufacturers, we rely on disclosures made by upstream suppliers. Suppliers typically disclose hazardous chemicals according to OSHA thresholds of 1% or 0.1%, depending on the specific hazard associated with the chemical. S3177 currently does not provide a *de minimis* threshold for reporting. In effect, downstream industries must gather information about trace levels of fluorinated chemistries that are not disclosed on safety data sheets. In effect, companies must either test their products or conduct extensive due diligence. Both situations present significant challenges that can lead to non-compliance, even with good-faith efforts to comply, because adequate test methods do not exist for the diverse range of formulated products that our members produce.

Companies would need to develop test methods and these, inevitably, will have limits on detection and other inaccuracies, and they are cost-prohibitive for small businesses. S3177 also does not provide a standard of due diligence, describing efforts the company must take to identify whether their products have trace amounts of PFAS. Because of these complexities, we suggest adopting a *de minimis* reporting threshold.

ACA further recommends modifying the definition of PFAS to chemicals with two or more fully fluorinated carbon atoms. This would provide some relief in identifying recordable chemicals without

compromising protection from PFAS contamination. Compounds with single fluorinated carbons are not associated with PFAS contamination, and are typically non-toxic. Similarly, we support other amendments to the definition of PFAS that would focus the legislation on those fluorinated chemicals that are most associated with contamination.

With the two or more fluorinated carbon definition, the State is still dealing with a broad set of chemicals, estimated by EPA to be around 600 or more chemicals. It also brings some focus on those chemistries that are associated with contamination, usually with four or more sequential fluorinated carbons, while also more closely aligning with EPA's PFAS definition.

Thanks again for the opportunity to speak with you. I've provided additional information in my written comments, and I appreciate your consideration.

Thank you.

SENATOR GREENSTEIN: Any questions? (no response)

Thank you very much, both of you. Thanks.

OK, I guess it's Ian McLaughlin, BioNJ -- it says no need to testify, but seeking amendments.

Are you here, Ian? (no response)

Not here? OK.

Haskell Berman -- no need to testify, seeking amendments. Did you want to just tell us what the amendments--

UNIDENTIFIED SPEAKER: We are in agreement with AdvaMed's testimony, and thank you for--

SENATOR GREENSTEIN: Say it again, I'm sorry.

UNIDENTIFIED SPEAKER: We are in agreement with AdvaMed's testimony (indiscernible) language.

SENATOR GREENSTEIN: OK, thank you.

Greg Costa, Consumer Brands Association -- opposed -- no, maybe not -- seeking amendments.

Are you still here?

UNIDENTIFIED SPEAKER: Senator, he left.

SENATOR GREENSTEIN: OK, thank you.

The last person I have is Sharonda Allen, Tri-County Sustainability -- in favor.

Hi, how are you?

S H A R O N D A A L L E N: (indiscernible)

Good afternoon, everyone. It's been a long morning.

Mr. Chairman, Madam Vice Chair, and Committee members, thank you for the opportunity to speak today.

I am Sharonda Allen, Environmental Justice Co-Chair for Tri-County Sustainability. We are the hub for the 101 towns, 10 Legislative Districts, and 1.2 million residents of Burlington, Camden, and Gloucester counties.

South Jersey has had enough of these forever chemicals. They're in everything we eat, drink, and wear. Last Tuesday, we spent two hours with Dr. Gloria Post, who is one of the preeminent scientists in the country on the subject of PFAS and drinking-water contaminants. The CliffsNotes version is that this stuff is just plan toxic. And, I just want to add in a little something: It causes infertility in men, as well; that was something that no

one else mentioned. So, maybe that would hit home and help with the cause. (laughter)

These chemicals stay in our bodies for years. For this reason, I want to thank Senator Greenstein and Senator Smith for introducing Senate Bill 3177. This smart policy gives consumers a fighting chance by letting them know what is in the everyday products we use before we make the decision to buy.

The people of South Jersey are smart. Give us the tools we need to make safe choices. With this said, we ask that the Committee vote today to advance S3177. This will help to curb exposure to dangerous forever chemicals.

Thank you.

SENATOR GREENSTEIN: Thank you very much. Any questions? (no response)

Thank you for coming.

MS. ALLEN: Thank you.

SENATOR GREENSTEIN: Is there anyone else I missed?

It would be hard for me to believe, but maybe I did.

(laughter)

OK, meeting adjourned.

Thank you.

(MEETING CONCLUDED)