Committee Meeting

of

SENATE ENVIRONMENT AND ENERGY COMMITTEE
ASSEMBLY TELECOMMUNICATIONS AND UTILITIES COMMITTEE

"The Committees will meet to hear testimony from invited guests on the costs and benefits of investing in grid modernization and establishing a 100 percent clean electricity standard for New Jersey"

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

DATE: March 11, 2024
10:00 a.m.

MEMBERS OF COMMITTEE PRESENT:

Senator Bob Smith, Chair
Senator Linda R. Greenstein, Vice Chair
Senator John F. McKeon
Senator Parker Space
Senator Latham Tiver

Assemblyman Wayne P. DeAngelo, Chair
Assemblyman James J. Kennedy, Vice Chair
Assemblyman David Bailey, Jr.
Assemblyman Julio Marenco
Assemblywoman Tennille R. McCoy
Assemblyman Christian E. Barranco

ALSO PRESENT:

Eric Hansen
Office of Legislative Services
Committee Aide

Celia Smits
Senate Majority
Committee Aide

Greg Harris
Senate Republican
Committee Aide

Miranda Crowley
Suzanne J. Miller
Office of Legislative Services
Committee Aides

Erin K. Reagan
Assembly Majority
Committee Aide

Diego Romero
Assembly Republican
Committee Aide

Meeting Recorded and Transcribed by
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NEW JERSEY STATE LEGISLATURE

ASSEMBLY TELECOMMUNICATIONS
AND UTILITIES COMMITTEE

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COMMITTEE NOTICE

TO: MEMBERS OF THE ASSEMBLY TELECOMMUNICATIONS AND UTILITIES COMMITTEE

FROM: ASSEMBLYMAN WAYNE P. DEANGELO, CHAIRMAN

SUBJECT: **COMMITTEE MEETING - MARCH 11, 2024**

The public may address comments and questions to Suzanne Miller, Miranda Crowley, Committee Aides, or make bill status and scheduling inquiries to Frances Hample, Secretary, at (609)847-3840, fax (609)292-0561, or e-mail: OLSAideATU@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 Assembly Telecommunications and Utilities Committee and the Senate Environment and Energy Committee will meet jointly on Monday, March 11, 2024 at 10:00 AM in Committee Room 6, 1st Floor, State House Annex, Trenton, New Jersey.

The committees will meet to hear testimony from invited guests on the costs and benefits of investing in grid modernization and establishing a 100 percent clean electricity standard for New Jersey.

Those individuals presenting written testimony are asked to provide 25 copies to the committee aide at the committee meeting.

FOR DISCUSSION ONLY:

A1480 Karabinchak S237 Smith, B	Revises State renewable energy portfolio standards.

(OVER)

S258 Smith, B	Requires electric public utilities to develop and implement grid modernization plans; appropriates $300 million.

Issued 3/4/24

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SENATOR BOB SMITH (Chair): Let me welcome you to the *two* most interesting committees in the Legislature -- Assembly Telecommunications and Senate Environment.

This is a hearing about getting information from you, the most notable-- I know everybody here gets a newspaper, either online or in paper.

Last year, 2023, was the hottest year in 125,000 years -- hottest year on the planet Earth in 125k. This week, *The New York Times* had an article describing how we've just gotten through the hottest February in the history of mankind. Last week and the week before, we saw Texas burning down. A couple of weeks ago, we had massive floods in California. This is serious; global warming is really serious. And, with our 133 miles of coastline, we're extremely vulnerable -- just as all the other people on the planet are vulnerable.

So, today, we're talking about two concepts: One is a clean energy standard for New Jersey -- 100% clean energy by 2035. Why do you want to do that? The Governor has already issued an executive order that that's the goal of the State. And, the problem is that we learned our lesson from RGGI. You may remember we had a very good regional greenhouse gas initiative. A prior governor pulled the plug, and we were out of RGGI for, like, eight years. So, the reason that you want to have a clean-energy standard in law is that the only way that is not the goal, or the direction to our cabinet members and a direction to everybody, is if you put it in law. You don't put it in law, the next executive, and I'm sure the next executive--

UNIDENTIFIED SPEAKER: We can't hear anything.

SENATOR SMITH: Oh, that's terrible.

I'm sure the next executive is going to be wonderful and very green. That's where you get the big bucks.

So, I'm sure the next executive is going to be a green executive, but why take a chance? I mean, we had a terribly stark lesson the last time with RGGI; we don't need a bad lesson with the 100% clean energy by 2035, which is our Governor's purpose, he did it by executive order.

And, then, the other part of the hearing is grid modernization. There are some who would argue to -- with you, or to you -- and I'm actually in that camp -- is that our grid really is inadequate, *really* inadequate. I mean, if we're ever going to get to 100% renewable, you have to get that renewable energy to the people who are going to need it. Charge their EV cars, get it to their homes when we do building electrification. But, if you don't have a grid that can handle it, you are *so* out of it, and I would contend that our grid is put together by duct tape, toothpicks, whatever. But, we're going to hear a lot more about it today.

So, the second bill is how do we--

UNIDENTIFIED SPEAKER: Louder, please.

SENATOR SMITH: The second bill is how do we get to the point where we have a grid that works, or will work better when there's really so many more thousands of megawatts coming from renewable sources. So, interconnections and other issues.

We're turning up the volume, does that help at all?

OK, well, for those who didn't hear any of that, there will be a transcript of this proceeding. So, if you testify today, be careful, because your words may come back to haunt you. It's going to be on record.

And, I have the extreme pleasure of doing a combined joint hearing with Assembly Telecommunications. I'm sure everybody knows the Assemblyman, Chairman, Wayne DeAngelo, who is present with his Committee today.

I am going to do a quick-- I have one of my members here, Senator John McKeon, an environmental star from the Assembly side of things. Assemblywoman -- I'm sorry, Senator Greenwald *(sic)* will not be here today?

COMMITTEE AIDE: She's in (indiscernible)

SENATOR SMITH: Oh, she's in Budget. We also have a big Budget meeting today, so they'll be in and out.

Let me turn the meeting over to Chair DeAngelo to introduce his members.

ASSEMBLYMAN WAYNE P. DeANGELO (Chair): So, good morning everyone, and I would like to officially kick off this Joint Legislative Hearing of the Assembly Telecommunications and Utilities and the Senate Energy and Environment.

If we could have a roll call. Joint roll call.

MS. MILLER: Senator Space.

SENATOR SPACE: Here.

MS. MILLER: Senator Tiver.

SENATOR TIVER: Here.

SENATOR SMITH: I apologize. We have two new members of the Committee, and, being really-- I don't know what it is, maybe it's Monday morning and it's tough getting started.

But we have Senator Space and Senator Tiver here, who I did not introduce, and I am now so screwed for the rest of the session.

So, if you would please go ahead with the roll call.

MS. MILLER: Senator McKeon.

SENATOR McKEON: Present.

MS. MILLER: Vice Chair Greenstein I understand is on her way.

Chairman Smith.

SENATOR SMITH: Yes.

MS. MILLER: Assemblyman Barranco.

ASSEMBLYMAN BARRANCO: Here.

MS. MILLER: Assemblyman Bailey.

ASSEMBLYMAN BAILEY: Here.

MS. MILLER: Assemblyman Marenco.

ASSEMBLYMAN MARENCO: Here.

MS. MILLER: Assemblywoman McCoy.

ASSEMBLYWOMAN McCOY: Present.

MS. MILLER: Vice Chair Kennedy.

COMMITTEE AIDE: He's on his way.

MS. MILLER: He is on his way.

And, Chairman DeAngelo.

ASSEMBLYMAN DeANGELO: Here.

MS. MILLER: You have a quorum.

ASSEMBLYMAN DeANGELO: If I can ask everyone to stand for the Pledge of Allegiance.

(Pledge of Allegiance recited)

ASSEMBLYMAN DeANGELO: Thank you, everyone.

Thank you, Chairman, for allowing me to partner in with this discussion today.

For those who are in the audience, for those who are out there, this is being recorded. This hearing is for us, so, if you can't hear us, we're hearing it; we're hearing the message from the public. When you get the opportunity to speak, you can come up and address the issues that you may have.

So, I apologize to those who can't hear us, but it is being recorded, and you're welcome to that testimony.

If you are going to have a discussion, please take it outside the chambers. Don't have them here; things tend to echo in here very loudly, and, again, like you said, we're moving this forward so that both committees here -- the same verbiage, the same statements coming from the public and the community and the interested parties.

As you heard the Senator say, we are moving towards 100% renewable generation. Part of this hearing is to make sure that our infrastructure can handle that; to make sure that we have that generating capability, and that we're not just putting out potential hopes. We're not just kicking a can down the road, and if we're going to make this happen, we have to do it collectively between the Senate and the Assembly to get it to the Governor's desk so that we are moving in the right direction.

Things that I have concern of-- I am a realist, I don't want to pat somebody on the back and say, "We're going to do it," and then it doesn't come to fruition. We're going to make sure that we have the opportunities and we have the technology and we have the personnel to build this. And,

to make sure once we have that generation, make sure that the infrastructure on transmission and distribution lines can handle that.

We will hear testimony today from the utilities describing where they are currently. And, I am a home-rule kind of person. I know we are on a multi-state grid, but I want to generate what we use and what we need. I don't want to push it off to another state that does not have the environmental standards or capability that we do. That's what is currently happening, folks, in case you didn't know. We do not generate enough for what we use right now, period. And, half of that comes from natural gas.

So, we have a lot of work to do. We're going to start our hearings going off. The Senator and I are going to go back and forth handling the microphone, so it's not just one person speaking. And, then, Committee members up here will have their opportunity to ask questions, or just for clarification.

We're bringing people up in groups, so those groups, we're going to allow more time that the Senator and myself feel deserve, and get more time, more (indiscernible) like the utilities. But, those and members of the public will be given five minutes to give us their concerns. I have a little timer up here to make sure-- We have about 30 people wanting to speak. We will be in excess of around three hours on this discussion. So, as you get tired or need to go outside, please do it quietly.

Thank you.

Senator.

SENATOR SMITH: Thank you, Chairman.

Our first panel -- and, by the way, you can speak on both bills, both concepts, when you come up. We're not going to do it twice.

All right, so, grid mod and the clean energy standard are both up for discussion when you come up.

Our first panel is electric utilities and PJM. We have Asim Haque, Vice President of Government and Member Services at PJM; Mike Wallace, Atlantic City Electric; Kieran Tintle, JCP&L with Jim Fakult, Electrical Engineer; and Josie DiRienzo representing PSE&G.

Come on up, guys and gals.

ASSEMBLYMAN DeANGELO: Chairman, just -- it was known that we're going to bring up, with Josie from PSE&G, Joe Checkley. He is the Business Manager in charge of the workers from IBEW Local 94, collectively.

Thank you.

Just note for the record, Assemblyman Kennedy, Vice Chair, is attending the meeting.

SENATOR SMITH: So, who would like to be the lead-off batter?

K I E R A N T I N T L E: (indiscernible)

SENATOR SMITH: And, you are?

MR. TINTLE: Kieran Tintle, representing Jersey Central Power & Light.

SENATOR SMITH: OK.

MR. TINTLE: My apologies in advance. I was to have a subject-matter expert with me today; however, due to the high winds this morning, she had to be called up north to address that.

So, with that, Chairman Smith, Chairman DeAngelo, and members of the Senate Environment and Energy Committee and Assembly

Telecommunications and Utilities Committee, thank you for the opportunity to provide testimony relating to clean energy and grid modernization.

We are thankful for the critical work you and your colleagues do to help us at Jersey Central Power & Light provide safe and reliable electricity to our 1.1 million customers in New Jersey.

As you well know, the electrical grid is essential to the provision of electric service for millions of customers in New Jersey. It is paramount that the State of New Jersey engages in discussions like the one here today to ensure State and regulatory actions do not jeopardize the safety, integrity, power quality, and reliability of the electric grid in any case.

JCP&L is committed to doing our part to work towards New Jersey's clean-energy goals, and we are thoughtful and deliberate in illustrating that commitment by continuously testing and introducing new technologies and renewable resources to the grid. I will outline for you just a few of the examples of recent plans, investments, and activity which illustrates that commitment. My submitted written testimony provides more detail on these and additional projects, but in the interest of time today, I have chosen to speak about just three of my company's New Jersey priorities.

The first priority I want to talk about today is our efforts to accelerate residential solar installations and connections across our entire service area. In 2023, JCP&L provided final approval for almost 5,700 net meter interconnection applications across our service area. Approximately 95% of applications are small interconnections, sized at less than 25 kilowatts, which generally residential-- which are generally residential solar installations. Our contractor partners know and understand this process, allowing for more efficient reviews, and a detailed study and/or construction

by JCP&L is generally not required for these small interconnections. Approximately 1% -- or about 40 to 50 applications per year -- are large interconnections, sized at more than 500kw. The processing times for these projects are obviously longer, as interconnections may require detailed study and circuit modeling; replacement of service transformers and circuit improvements; or substation modifications. Equipment lead time and the scheduling of necessary forced outages to complete the work can cause further delays for these projects, so we have made a concerted effort to grow our installations on smaller and less complicated residential installs.

On another renewable energy front, one that is of critical importance to the State's clean-energy goals, JCP&L is engaging in the State's offshore wind development process. Our company is proud to have been awarded the majority of the transmission solicitation for connecting offshore wind-generated electricity to the grid through the State agreement approach, and we are continuing to execute on that award. Our piece of New Jersey's ambitious offshore wind plan is once the energy has been brought to the shore from offshore developments to connect the wind generation to customers across the state. The overall award consists of dozens of small onshore projects, and work is currently in the engineering and procurement phase with geotechnical surveying also underway. As part of the procurement phase for this effort, we anticipate placing major equipment orders very soon to ensure that these materials are received on time to begin work.

The final priority I want to touch base upon today is maybe the most exciting. This past November, JCP&L filed with the BPU "Energize NJ," a proposed $931 million distribution upgrade program. Furthering the success we saw from our Reliability Plus program in 2018, Energize NJ

proposes more than $270 million in grid modernization, including the installation of more than 2,000 additional trip-saver devices across nearly 500 JCP&L circuits. More than a half billion dollars in system resiliency upgrades will also ease the introduction of distributed energy resources through the build-out of additional circuits, and the segmentation of customer pods. An additional $100 million is proposed for substation modernization, increasing remote access and automation capabilities in these areas and enhancing switch gear at our coastal substations to provide more protection from the salty environment.

Our team is working diligently to educate stakeholders in our service area of the proposed improvements that could come to their community, should the BPU approve our application. I welcome the opportunity to speak more with each of you as well about what this program could mean for the future energy security of your individual communities.

In closing, our company will continue to work diligently with our industry peers, regulators, and government partners to ensure that the efficiency and integrity of the electrical grid is maintained as we continue to advance to a clean-energy future. We appreciate the opportunity to discuss these very important issues and some of the proactive measures and plans we have in place to best serve our customers with safe, affordable, and reliable power, and we look forward to continuing to work closely with you and your colleagues to achieve our mutual goals.

SENATOR SMITH: Two quick questions.

When did you file this rate case? The grid mod?

MR. TINTLE: The IIP was filed on November 7th of 2023.

SENATOR SMITH: OK, congratulations on doing that.

Has JCP&L put forward any applications for money under the IRA?

MR. TINTLE: I believe so, and I would be happy to follow up--

SENATOR SMITH: Would you--

MR. TINTLE: --with you offline--

SENATOR SMITH: Yes, please--

MR. TINTLE: --with the full--

SENATOR SMITH: Yes, send us that information.

MR. TINTLE: Absolutely.

SENATOR SMITH: Who would like to go next?

M I C H A E L W A L L A C E: I'll go next, Chairman.

Good morning, Chairman Smith, Chairman DeAngelo.

My name is Mike Wallace, Senior Manager State Government and External Affairs for Atlantic City Electric.

With me, I have my colleague Chris Barker, Manager in Regional Capacity Planning, to help with any questions you may have.

We appreciate the opportunity to speak to you today on the future of the electric grid in New Jersey and our efforts to modernize the grid in Southern New Jersey for 572,000 customers.

At Atlantic City Electric, we are committed to being a critical partner in helping New Jersey advance a clean-energy future and meet the State's clean-energy goals. We recognize that a grid-- We recognize that the grid is the 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.

Our customers across South Jersey are continuing to experience improvements in the reliability of their energy service, a result of our ongoing efforts to reinforce and modernize the local energy grid, adding new technology and smart devices and targeted projects to increase resiliency. These efforts resulted in our customers experiencing the lowest frequency of electric outages ever in 2023. Frequencies of outages in 2023 decreased from the previous low -- record low -- in 2022 by 5%, and has improved by nearly 60% since 2012.

Connecting our customers to solar and other clean-energy sources is a top priority at Atlantic City Electric. To date, we have helped nearly 50,000 customers adopt solar, totaling more than 550 megawatts. In fact, solar has experienced such high penetration in our service area that it now accounts for approximately 25% of net peak demand. We recognize that continuing to sustain solar growth with a large amount of solar on our system requires ongoing investment and grid modernization.

Last year, the Board of Public Utilities approved our Powering the Future program. This was a filing of a four-year, $91.3 million portfolio of projects that expands our support for New Jersey's clean-energy and climate goals while furthering efforts to deliver safe, reliable service to our customers. The program allows for the accelerations of 22 targeted projects that span four different categories: Targeted reliability improvements; smart technology upgrades; solar distributed energy resource enablement; and substation improvements. The investments through our Powering the Future program will address many of our closed feeders, which would pave the way

for roughly 50,000 new rooftop solar customers -- potentially doubling the number of solar installations in our service area. And, overall, we plan on opening about 85% of our closed feeders by the end of 2025.

Closed feeders are often caused by substation transformer limitations due to reversed power flow that occurs from behind-the-meter solar, generating more energy than is used at the meter. In response, we have incorporated over-voltage protection into our standard transformer protective relaying package used across the Atlantic City Electric system. All newly constructed projects will utilize this standard going forward. This upgrade standard maintains the safety, reliability, and resilience of our transmission and substation equipment during system faults when reverse power flow conditions are present due to the high penetration of (indiscernible) like solar.

Additionally, we have established a multi-year program to proactively install over-voltage protection schemes on our transformers across the system in order to protect the system for -- protect our equipment for reversed power flow conditions. This program is expected to begin in 2024. It has begun, and it will help prevent us from needing to close circuits to solar in future years.

We are also exploring ways to support larger solar projects with a focus on developing cost-sharing mechanisms that lower the financial barriers for solar developers for large interconnections over 1 megawatt. We are continuing to develop this concept and socialize it with developers for feedback. We will provide BPU a staff in the Legislature progress updates, as we believe this approach will support an important pillar of the solar market in New Jersey.

Next, our smart energy network deployment continues on track. We have installed more than 460,000 smart meters as part of our smart energy network, laying the groundwork for New Jersey's exciting clean-energy future with an improved platform that can more efficiently integrate new energy technologies and better connect customers to solar energy, energy-efficiency programs, and electric vehicles. We expect to have all smart meters installed by mid-2024, with a goal of achieving enhanced functionality for all smart meters by fall of 2024.

We are also supporting the development of the New Jersey Economic Development Authority's New Jersey Wind Port -- a South Jersey facility that is essential for the staging, assembling, and manufacturing activities for offshore wind projects along the east coast. Our Wind Port Power Connect Project includes upgrading approximately 11 miles of powerline with stronger utility poles and more modern equipment to serve the New Jersey Wind Port facility. The powerline primarily runs along an existing right-of-way from one of our substations in Salem, New Jersey, to a customer-owned substation at the Wind Port facility on an artificial island in lower Alloways Creek Township. Construction is expected to be completed by the fall of 2024.

And, finally, we continue looking for innovative ways to enhance reliability and modernize the grid for our customers. One project of note is our Beach Haven battery energy storage project. The 1-megawatt battery-storage project improves the reliability and quality of energy service for thousands of customers and seasonal visitors in Beach Haven and Long Beach Island during times when customer demand for energy is highest. The battery-storage system will also act as the back-up system if there is an issue

with a transformer or other critical equipment at a substation serving the community -- especially during periods of high demand, creating additional capacity and supporting the overall reliability of the local energy grid.

In closing, thank you again for 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.

SENATOR SMITH: Two quick questions.

Did the BPU approve the rate case for the $93 million?

MR. WALLACE: Yes.

SENATOR SMITH: So, you're going at this point.

MR. WALLACE: We're going; correct.

SENATOR SMITH: OK, that's terrific.

And, same question: Has your utility made any application to the Federal government for IRA funding?

MR. WALLACE: Yes, we have, and continue to make applications as well. Yes.

SENATOR SMITH: Any other? (no response)

I think we're ready.

J O S E P H C H E C K L E Y: Good morning, Chairman DeAngelo, Chairman Smith, and Assembly Utilities Committee; Senate Energy and Environmental Committee.

My name is Joseph Checkley, President and Business Manager of the International Brotherhood of Electrical Workers -- IBEW Local 94. I represent more than 3,200 employees at PSE&G generation and utility businesses, as well as 600 line-clearance tree trimmers throughout the State of New Jersey.

I am joined by Ed Gray, Senior Director of Asset Management and Planning for Public Service Electric & Gas. In that role, he is responsible for electric asset strategy and asset reliability and electric delivery system planning.

Thank you for the opportunity to comment on the important topics before you today -- grid modernization and supporting the State's transformation to clean energy.

Ed and I are here representing PSE&G in different roles, but we can both attest to the solid operation in this journey into the clean-energy infrastructure-focused company with a vision and mission to powering a future where people use less energy and it's cleaner, safer, and more reliable than ever. We have a great story to tell, along with a few factors to transition into the energy of tomorrow.

As we address the challenges of modernization of the grid, it is important that we consider the following principles: Greater resilience to hazards of all types and impacts of climate change; improved reliability with long-term, multi-year distribution and transmission planning; enhanced security; affordability; flexibility; the industry's ability to integrate load growth; distribute energy resources; and EVs; sustainability; how we support energy master plan and other goals.

Over the last 20 years, PSE&G has improved reliability by approximately 20% and reduced methane emissions by approximately 35% -- all while maintaining the lowest operation and maintenance cost per customer compared to our state and regional peers.

Over the next five years, PSE&G plans to invest between $18 and $21 billion to modernize and strengthen our gas and electric systems,

which have advanced New Jersey's decarbonization and energy policy goals across all sectors. We have advanced one of the most aggressive carbon-reduction targets for the large utility and power generators. PSE&G eliminated its fossil generation portfolio and became a primarily regulated utility with carbon-free generation.

We are keeping our nuclear plants online that produce 85% of New Jersey's carbon-free energy, the foundation of New Jersey's clean energy supply. We continue to invest in our infrastructure, to ensure that while reducing emissions, we are providing safe, reliable energy for our 2.4 million electric customers, and the 1.9 million natural gas customers that we are ready for the future energy needs of our customers.

We are also committed to provide support for decarbonization policies in the transportation, the Number 1 source of greenhouse gas emissions; EV charging infrastructure; and a greater focus on conservation efforts like landmark energy efficiency programs and its job-training program.

Electrification won't happen overnight. We need to be pragmatic; focus on strengthening what we already have; and plan on what is needed for the clean-energy transition. It requires a comprehensive statewide distribution and resource approach to maintain the functionality of our transmission and distribution networks, more conservation efforts, such as energy efficiency and aid in mitigating steep demand increases. We think there are a few over-reaching factors that should be part of the transition to clean energy and the future policy decisions: Integrated distribution planning; a utility roadmap to pinpoint utilities' resource needs; policy goals; operation constraints across New Jersey's dual energy systems and a plan to respond to customers' needs; improved and accurate regional load

forecasting; paramount in responding to customers' demands with the State decarbonization policies in an accurate load forecast; proper planning and transmission required by PJM; and utilities forecast of customers' demand over 10 to 15 years on the horizon.

The collaborative efforts of BPU, PJM, EDC resulted in PJM's reflecting New Jersey's goals, including for electrification and some extent of electric vehicles into 2024's load forecast. This is an important step forward in setting the regional load forecast in an annual exercise that must be done correctly every year continued with robust conservation efforts that will aid in mitigating steep demand increases. State regulatory framework, including rate mechanisms, cost recovery, to guide how the investments will be made, assuring customer affordability and determining how accelerated reinforcement upgrades to the electric system should respond to load growth, including DERs, EVs, and others.

PSE&G is up for the challenge and remains committed in doing its part to support the State's transition into a clean-energy future and preserves the reliability of electric and gas systems. It includes a mix of decarbonization, solutions, and opportunities, including our gas distribution system that meets the demands of 1.9 million customers in this state. Be open to considering new solutions and technology that can -- that our own network, geothermal, carbon capture and storage, RNG, hydrogen, and etc. Be open to considering other policy frameworks to give preference to in-state growth energy resources where utilities can play a leading role in developing, building, and contracting clean-energy resources.

The transition to a cleaner and stronger energy future signals the potential for continued investment from our companies as well as other

entities in ways that will support union workforce and contractors, support thousands of labor trade, and the needed skillsets to help facilitate growth in this state.

Over the years, PSE&G programs have created thousands of jobs -- a testament to our skilled men and women in the State of New Jersey. Here are a few examples:

So far, support has-- We've created under Clean Energy I and II, 8,200 jobs; Energy Strong I and II, approximately 1,800 jobs; gas GSMP I and II with the extension, 6,600 jobs; and the infrastructure advancement program, another 600 jobs.

In conclusion, as the landscape of the energy industry changes and we work towards a cleaner tomorrow, planning is key. We are ready to do our part and work with the leaders and stakeholders to put forth what's needed for the future. Our collaborative efforts have made our systems more resilient and reliable. We work hard every day strengthening and improving our system to provide reliable electric service now and into the future. We can do more to respond to evolving energy and customers' needs and expectations.

IBEW Local 94 represents 4,000 members in this state, and we're ready to do our part.

SENATOR SMITH: So, a question for everybody.

This is a hearing on, do we need to do grid modernization and should we adopt the clean energy standard as statutory?

So, let me ask you to answer -- for the three people who have already spoken: Are any of the three of you in disagreement that we should put the clean-energy standard into statute?

Silence is assent here. If you don't like it, say, "I hate that sucker."

So, JCP&L, Public Service, and ACE. You have no problem with the 100% renewable by 2035 being the adopted legal standard for the State, correct? (no response)

I'm sorry, I'm looking at three deer. You're in the headlights here. The point of the hearing-- Do you want that energy standard in statute or not? (no response)

My God.

ASSEMBLYMAN DeANGELO: Let me ask if I can share what the Senator's talking about.

So, I'm sitting down and I'm listening, I'm hearing everything that the three of you just said -- before we get to the gentleman on the end -- talking about our grid. And, I shared a concern. Because I'm a real just simple guy. I didn't go to college; I'm an electrician by trade. So, I do listen twice as much as I speak; try to hear everything that's going on and try to digest it.

What I hear-- I hear that we don't generate enough electricity for what we use now, currently, in the State of New Jersey. That we get some from outside the state. What I hear is that on the outside, "Hey, we want more electric vehicle charging stations. We need to promote electric vehicle use throughout the state. We need to go 20, 30 times the amount of charging stations that we have in the State of New Jersey to make sure that there's no driving anxiety for those that have electric cars."

And, I look into what these stations are. And, a small charger is a 50-amp circuit -- and, those who don't know what that is, that's like an

electric oven in your house, or your central air. And, then I look at the high-speed chargers that are being put up now, and they're 100 amp. What is that? It's a small residential house. And, then I hear the discussion about moving towards heat pumps, and how much power does that take? I looked and researched and found out that residential heat pump in a normal-sized house is anywhere from 50 to 60 amps. And, again, another electric stove, electric oven, air conditioner in your house.

So, as we are going to be potentially using more electricity, and as we're trying to move ourselves to 100% renewable, right now it's 2050; we're trying to escalate that to be more environmentally friendly.

Do you guys see a concern going forward on what we have on the voltage that we're providing? The megawatts we're providing out to our residents, putting that plan together? That's what we're kind of asking; that's why we need your help. Because, I don't want to just push something out there that's going to collapse.

MR. TINTLE: I think it's difficult for me and my company right now to speak on generation, as we're not a generation company. We're strictly distribution and transmission. So, in thinking about everything that you just said, our focus -- and, what you'll read in the testimony and what I touched on a little bit -- is ensuring that that much-needed power has a means to get where it needs to go.

So, for that customer who perhaps has range anxiety or something like that is considering making a move to an EV, the first thing that I'd be asking is, "Well, am I going to have reliable enough service to be able to charge it every night? If there's an emergency, am I going to be able to get out of the house and get where I need to be?" And, that's exactly what

we're working on; that's exactly what that filing that we made in November in front of the BPU is after -- improving reliability for all of our customers.

On the transmission side of things, kind of the same idea. We're bringing more clean energy on, so we need to make sure that we have adequate capacity. And, looking at the way that our transmission is structured right now, things flow very west to east, that's kind of how it's always been in bringing offshore wind here in New Jersey. We're going to have to re-engineer that a little bit, we're going to have to be moving from east to west. And, so, that's where we feel we're doing our part with that transmission line here through the center of New Jersey.

So, that's where we see our part, and we are doing everything we can to keep up with the growing demand of our customers and make sure that we're keeping power flowing both ways.

ASSEMBLYMAN BARRANCO: Chairman--

SENATOR SMITH: Yes.

ASSEMBLYMAN BARRANCO: I have something I'd like to add, Mr. Chairman, if I have a moment.

So, I have a statement, and then I have a yes or no question, and we want you guys to give us a yes or no answer.

So, my first statement is, we can generate all the power we want from any source-- First of all, let me just clue you guys in. So, I am a project manager. I am an IBEW electrician, and, I have been a project manager on a lot of infrastructure projects throughout the state, whether it's a switching station or a generating station or a substation. I've worked very closely with PSE&G on how they generate and distribute power.

You can generate all the power you wish from all the sources you wish. But, if we do not have the distribution system to get that power to where it's consumed -- which is all of our houses and all of our places of work, and this building, and everything else that requires a light -- it doesn't matter how much power you generate if you do not have the distribution system to get that power where it needs to be.

So, these two bills, Mr. Chairman, have a chicken-and-egg problem. We cannot talk about revising the State's renewable energy portfolio until we talk about the electric grid-modernization plan. The electric grid-modernization plan needs to come first. It doesn't matter how much power you make if you can't get it there. That's my first-- That's my statement.

My question is this: The revision of the State's renewable-energy portfolio, as I read it this morning, Mr. Chairman -- both of you -- mandates that you, the generators of electricity in the State of New Jersey, need to produce 35% of the electric that we consume from renewable sources by next year. Is that feasible?

Yes or no? And, I need you to say something here, guys. I know that you're putting your reputation on the line, but we need professionals to answer these questions, not legislators. We need people-- This is-- I have said it many times. The efforts that we're trying to make in this world are not of a political dilemma. We all want renewable clean energy. This is an engineering dilemma, and we need you guys to say that so that we can make the decision going forward something real that we can meet.

MR. WALLACE: Assemblyman, respectfully, Atlantic City Electric is not a generator as well as JCP&L has stated.

So, we'll be procuring that energy, so that's-- I can't speak to that--

ASSEMBLYMAN BARRANCO: No problem--

MR. WALLACE: --today.

Thank you.

ASSEMBLYMAN BARRANCO: You're not our guy -- for that question. But, I'm sure our guy is in the room.

SENATOR SMITH: Several.

MR. CHECKLEY: So, I can only speak from the IBEW perspective, and the training perspective on what it takes get a workforce.

And, I can tell you it is a large goal you're asking me to answer. Because the workforce that we have for utility workers, and the training program that goes along with it, it is an extensive program to train--

UNIDENTIFIED SPEAKER: We can't hear you.

MR. CHECKLEY: It is an extensive program to train--

ASSEMBLYMAN DeANGELO: Hold on one second.

Ma'am in the back, this is being recorded. This discussion is for us up here on the panel, but you can get a copy of those records after this. Please don't be disruptive during the meeting.

Go ahead, Joe.

SENATOR SMITH: Speak up, too.

MR. CHECKLEY: So, my original statement was, from the IBEW perspective, you're looking for me to answer on a timeline and where my workforce and my manpower comes from is from a training perspective. That training perspective can take up years to train and qualify.

We are in a timeframe right now with our training and qualifications where we are bringing in outside resources to help and to just do the current upgrades and modernization.

ASSEMBLYMAN DeANGELO: Thank you, Joe.

UNIDENTIFIED SPEAKER: Yes, sir.

E D W A R D G R A Y: I'll just offer that this is a question where we have way more variables that we don't control than we do, we're asking the utilities, "Can we do it?" We haven't talked about the generation.

We also have to set up the rules, how are people going to-- If we're going to send external parties -- we talked about this as part of our testimony. It's an integrated discussion with PJM. We have to have also the groups that are going to be producing this. Solar developers, how do they get compensated? How do we cite stuff? It's much more than, "What can utilities do?" It's, "What are the rules going to be set up?"

I was involved in the initial solar stuff back in 2010, we have SRECs. And, we saw solar come on like gangbusters. We really saw huge numbers. We've got over 1,400 megawatts of solar on our system today. But, the numbers that you're asking for far exceed that. And, without the rules being set up in an integrated way, how do we think about this? Is it safe?

Because, it needs-- Our primary goal is safe and reliable, that's Number 1. Because, if we have a reliability problem, that's on us, and we can't have that. But, the other side of it is, "How do we make it affordable?" That's where some of those rules come in. How are we going to incent this stuff?

So, I think it's a-- If we do that, we need to have a much more comprehensive discussion with all the players involved to kind of-- What are the right rules to set so we can make this happen? Because the rules are set; we'll follow them. If this is the goal and we've got it set up and everyone knows what the rules are, we'll make it happen. We can definitely do that.

But, the problem is, there are too many things that you're asking us to decide that really go beyond what -- I mean, there's technically what we can do, and then there's how is it going to be set up to make it work overall? So, that's what we kind of talked about, is that whole, we need a multi-year plan, like 10-, 20-year plan with all the players involved, so we talk about this stuff and try to figure out the right, safe, reliable, most cost-efficient way to get it done.

A S I M Z. H A Q U E, Sr.: Chairman Smith, Chairman DeAngelo, Assemblyman -- You've asked an excellent question.

I have not testified yet, but it might be a good time for me to interject into the conversation, if that's OK.

ASSEMBLYMAN DeANGELO: Go for it.

SENATOR SMITH: Do your testimony.

MR. HAQUE: Thank you so much.

You all have a copy of my testimony. My name is Asim Haque; I am here from PJM Interconnection. We are the regional grid operator for 13 states and the District of Columbia. We operate at the bulk power level.

So, I think it would be great if we just entered into a conversation. Again, you have my testimony. Ultimately, we were invited to participate today; we sincerely appreciate the invitation.

Both of these bills that you're considering are distribution and retail in nature, and, thus, and we don't have a position on the legislation. But, you're asking great questions around what is within the realm of the possible.

Let me just talk to you a little bit, spend a couple minutes talking to you about what we're seeing on the bulk power system. Again, the bulk power system is the high-voltage transmission system that effectively connects to utility-scale generators. We make sure that the watt is delivered to my colleagues here on the right side -- that they're delivered to distribution substations that we're matching supply and demand in real time. It is -- based on your experiences -- quite an operation. We invite you to come visit our control room in Valley Forge, Pennsylvania, to see it done in real time.

We also plan the bulk system. So, we plan transmission planning. We have to make sure that we envision it as urban planning. So, if you know that a load pocket, a demand pocket, is going to be increasing somewhere, we need to make sure that the transmission is robust enough to make sure that the watt gets from point A to point B. And, we also operate competitive wholesale markets because we're trying to keep costs down as all of this progresses.

So, where do we stand right now? We are certainly in an energy transition. I think everyone at PJM Interconnection would tell you we are in an energy transition. Why are we in an energy transition? Because the generation mix of tomorrow is going to look very different than today. So, I just kind of hold a few numbers out, and we'll refer to a few of the graphics that are in my presentation -- but, a couple sort of numbers to have an understanding of.

So, we're about a 185,000-megawatt system. In our generation interconnection queue, which is the line the generators get in to actually connect to the system, there are 250,000-some megawatts that are waiting to interconnect onto the system. Ninety-eight percent of them are either solar, wind, or battery source. So, I know there are a lot of individuals in the room who are concerned about the future of the generation mix and the power system. The grid is going to be greener; the generation interconnection queue is evidence of that. So, we are in an energy transition. We're studying the energy transition pretty intensely. We have committed to helping states advance their energy policies. Part of our five-year strategy is to facilitate State and Federal decarbonization policies reliably and cost-effectively, because ultimately our folks house the engineers who are trying to make sure that with all of these policies in place, who we can actually deliver the watt from point A to point B.

So, just a couple of thoughts as you sort of progress through your thinking on this. Again, PJM does not take a position on this -- on either of these bills. But, if you actually take a look at-- In our testimony, page 3, we have gone through what is an exhausted interconnection process reform effort. So, we started this back in 2021. We're regulated by the Federal Energy Regulatory Commission based out of Washington, D.C.

And, so, the FERC -- is the acronym -- approved our reform process, and we are in the throes of processing a lot of renewable power that is trying to find its way onto the bulk system. Again, the queue is 250,000 megawatts of primarily renewable resources trying to find its way onto the system.

If you take a look at one of these graphics -- and this is just sort of-- These are data points, and these data points can change as time evolves. But, they're data points for today as you're considering what to do legislatively. In 2024 and 2025, based on the process that was approved by the Federal Energy Regulatory Commission, you're going to process 72,000 megawatts of primarily renewable resources through the queue. It's a *lot* of green power.

There is another slide, actually, after that slide in your testimony, that shows the breakdown of sort of state by state by state, of all of the states and the power that was within that 72,000 megawatts, that is going to find its way onto the grid. New Jersey's numbers are there, along with every other state. There will be a lot of-- There will be a lot of renewable power that A, finds its way into the system, and B, will be available to generate what is effectively a renewable energy credit, because that's effectively what these RPS standards across the jurisdictions are meant to do -- to create these renewable energy credits that my colleagues over here, as well as competitive suppliers, then acquire. And, then, effectively, that acquisition represents delivery to consumers.

So, there will be a lot of RECs -- there will be a lot of renewable energy credits -- that find their way onto the system. Now, REC prices, which are procured competitively, are kind of high right now. And, that's just because the demand for RECs is high. But, with all of this supply looking to find its way onto the system, one would expect that the supply and demand fundamentals will even out, and RECs will get cheaper. But, regardless, we're not talking about costs here we're just talking about can it happen? Can the numbers happen?

The honest answer is we don't know yet. That's the honest-to-goodness answer. So, we are not policymakers; I'm not here to suggest policy. The ability to be flexible in this as we are trying to determine-- And, specifically, the item that I would just spend some time thinking about is the in-state requirement, because there will be a lot of RECs that find their way-- There will be a lot of renewable power that finds its way onto the PJM system at large, and every state's got different dynamics. And, so, there will be a lot of RECs available. Whether or not there will be enough in-state RECs by date certain is something to think about and consider. I think that our interconnection queue reform, again, will create great opportunity for a lot of renewable power to find its way into the system. It will create a great opportunity for more and greater renewable energy credits.

The question ultimately will become, what gets built? And, let's just talk about that for two seconds. So, what will get built? In the slide presentation that -- and a few of the graphics that are in the testimony that I provided, one concern that we have -- and, we're being very transparent about this concern -- is that we currently have about 40,000 megawatts of resources that are through the generation interconnection queue, primarily renewable resources. And, they're done with anything PJM oriented. We've given them-- You can, from an engineering perspective, interconnect to the grid safely. And, so, that's 40,000 megawatts and it's sitting dormant right now. The reasons that we hear are the supply chain for parts is really challenging right now. We hear that in some jurisdictions, the ability to obtain State and local citing permits is really, really challenging. We hear that in some facets of these development opportunities -- and, you've seen it, unfortunately, with

what's happened with offshore wind -- but the financing dynamics have changed or evolved.

So, again, just a data point. I'm not here to be suggestive about what you should do either way. Again, these are primarily retail-related bills. But, that 40 gigawatts -- those 40,000 megawatts that are kind of sitting dormant, not interconnecting -- is concerning to us. It's a concerning data point to us. So, we are hopeful. We are very hopeful that we see that build-out, because what we *are* worried about is later on in this decade a supply-demand mismatch. So, there are a lot of primarily fossil resources that are leaving the system for primarily policy considerations -- a lot of Federal EPA rules. New Jersey's got a standard in place. There's a standard out in Illinois. Virginia has a standard in place, deeper into the future here. So, we're seeing a lot of fossil leave the system; we've got to get that fossil replaced by these renewable resources that are trying to find their way onto the system in order for supply and demand to match.

So, we're concerned about that. This 40,000 megawatts of resources that have found their way through the queue-- We're going to process 72,000 megawatts of resources over just the next two years. We've got to see that build-out occur.

And, so, that's effectively it. Again, I don't have commentary on the specifics of either of these bills because, again, we are a wholesale power grid operator and these are primarily retail in nature. But, I did want to provide you with just a little perspective as you're advancing through this. Again, I don't have specific answers on what should the in-state number be. But there are -- as my friend down here said -- there are a lot of variables that are outside of our control. Hearing from a developer, "I really want to build

out, but I cannot get a transformer," or, "I cannot get a solar panel," that is out of *any* of our control, frankly.

SENATOR SMITH: Why can't you get a connection?

MR. HAQUE: Yes, well, we are trying there. We are certainly trying.

SENATOR SMITH: When you get a chance, would you send us -- and we'll distribute to our respective committees -- a little letter about your interconnection reform?

MR. HAQUE: Yes.

SENATOR SMITH: We'd like to hear more about that because we hear--

MR. HAQUE: Absolutely, Chairman--

SENATOR SMITH: --horrible stories about connection.

MR. HAQUE: Yes, I am absolutely happy to do that.

Again, we went through a process -- a two-year process -- where we talked about it within PJM stakeholder process, got approval from the FERC, and we are now in the process of processing all of these backlogged projects. There's going to be quite a few projects that find their way through the queue.

Availability of renewable resources should not be an issue with all of these projects that we're processing. It's a wonder that they get built.

SENATOR SMITH: Thank you for your comments.

UNIDENTIFIED SPEAKER: Any more questions for the gentleman, Mr. Chairman?

ASSEMBLYMAN BARRANCO: OK, so, if the 40,000 megawatts of build-out do not occur, will we be able to increase our renewable consumption from 8 to 35% by next year?

MR. HAQUE: I have not run the numbers on that specifically.

In New Jersey, the breakdown -- I don't have the breakdown of the 40,000 megawatts that have cleared the queue and what belongs, effectively, to the State of New Jersey -- the boundaries of the State of New Jersey.

You've got-- We do, I do have -- and, I can get you those numbers, because I think that's actually very relevant to what you're deliberating here. We do have a breakdown of the 72,000 megawatts for '04 and '05 that are going to find their way through the queue. They equate to 25 projects, 1,500 megawatts or so.

Your queue, specifically New Jersey's, have a lot of offshore wind. You've got storage. You don't have a lot of solar in the New -- in from the -- what are -- purely New Jersey projects trying to find their way onto the system. A lot of offshore wind, some storage, but very little solar. When I look at sort of state by state by state and compare, most states are in a half solar, maybe a third -- half solar, a quarter to a little more wind, and then a good amount of battery technology. But, there's not a lot of solar trying to find its way onto the system in New Jersey right now. And, what those dynamics are, we're not privy to.

But, just as a data point for you all -- another data point for you all -- as well. But those are just hard numbers, and the reality of where we're situated right now.

ASSEMBLYMAN BARRANCO: Thank you.

I never met a PJM guy; I'm glad to have met you.

MR. HAQUE: Thank you very much.

ASSEMBLYMAN DeANGELO: Thank you.

This is kind of more a follow up on the discussion. I appreciate your discussion on that; very helpful for us.

As I looked at our system, we need to get moving on the offshore wind, respectfully. And, some people who live on the coastal region, I'm sure they found Senator Smith's email -- they have found mine -- on those who don't want to see the offshore wind projects come to fruition. But, I believe it is an integral part of what we need to do, because of the magnitude that it can provide our state.

What I also would like to see a lot more of in the panels up here as we're going forward is a lot more battery storage. So, as I see it, the offshore wind -- and, common sense is going to tell you we're going to use the power during the day, for the most part, especially in the summertime; at evening, not so much. But, the wind doesn't stop at night. The sun stops at night, but the wind doesn't stop at night. So, we're going to be able to charge up these batteries and have these battery-storage units whether we use the type that are solar, and those who don't understand or see in the report, you see a couple million watts in the Conex box size, a railroad car size Conex box, to building them inside as we're pushing in our offshore wind power.

I see a great opportunity, but, again, my concern comes up throughout the past 17 years I've been here, you see very minimal conservation of the use of power. That was part of our discussion. A lot of it is just on, hey, we need to generate more. And, I see the panic when we're out of power.

So, for those who are just talking on the dais, I think we need a stronger vegetation-management plan, making sure that we have our utility distribution and transmission lines -- that there's not, going through Main Street -- we see our utility lines and you see the trees with the bad haircuts. It's really dangerous, and I say that respectfully to the men and women who are installing or maintaining these distribution lines. They're not working on power that's off; they're working on live electricity, and their lives are in danger. It's like going into war, it's horribly dangerous. I feel for the workers, and we need to do a stronger job on vegetation management as well.

As you heard the Assemblyman say, we don't have a good power grid coming to the household, it doesn't matter what we generate. So, I know that we are working on big projects, and I know we're crossing the 500-meg line coming from the shore region over towards Lawrenceville, New Jersey, on the Texas Avenue area.

So, I know we're making inroads. That's part of our concern. We want to make sure that we can deliver so that we're not looking at, hey, are we going to hit this 35% mark in a year? The Senator and I, we want to make sure that when we're putting something out, we've got to make sure that it's deliverable for the most part, and we don't just want to see it, "Oh, well, we tried" and shrug our shoulders later.

MR. HAQUE: Chairman, can I add one thing to that?

I did want to say -- and, one of the gentleman here mentioned it -- we have done some -- put together -- some really tremendous work on -- obviously, PJM is not in the policy-making space, so if we have an offshore wind policy that finds its way onto our desk, we try and facilitate that and it just sort of is.

But, I did want to say the work that has been done, and the name of it was mentioned as a concept of state agreement approach -- on trying to build out the transmission system to help advance offshore wind is honestly pretty foundational work. And, I want to compliment, specifically-- I did watch the Oscars last night, so I want to thank some people-- I am going to compliment specifically the New Jersey Board of Public Utilities, and the late President Fiordaliso, our new Chair President Guhl-Sadovy, and that staff worked tirelessly with us to try and advance what is an entirely new framework to advance offshore wind transmission. This is all stuff that folks have not done, so their ability to really put pen to paper with us on that matter now-- The projects and where they're situated, it's a different story altogether, but we are effectively preparing for and creating the transmission grid on shore to allow for those watts to inject safely and reliably.

So, I did want to just say that and also thank my colleagues at the BPU.

ASSEMBLYMAN DeANGELO: Any Committee members have any questions?

Assemblyman.

ASSEMBLYMAN BAILEY: I guess more of a statement.

First of all, I just-- It's great to see District 3 so well represented here today in these discussions, with our first panelists. So, it was great to see their voice heard today.

Much like you said, though, it's going to be just common sense on this. I can look back to early in 2010 when my own private organization jumped into the pond of solar. And, when we tried to upgrade, because the grid wasn't ready yet in Salem County, we were unable to do so. But Atlantic

City Electric came along and increased and upgraded that grid and allowed us. I'm looking back at the days of 500-plus SRECs -- per SREC. Those days are gone; maybe they'll come back, but they're gone for right now.

So, it is important. Ultimately, that is the chicken or the egg. The grid has got to be in play. We can have all these great ideas that are important ideas for our future, but unless we have that answered first, then some of these things can go by the wayside.

So, thank you very much for your comments today.

ASSEMBLYMAN DeANGELO. Thank you.

And, Chairman, the last question I have -- and, I'm not expecting the answer now, but maybe if the utilities can get -- specifically Public Service -- can get some information.

I know we have three reactors down in Salem and Hope, they generate about 2.2 billion watts if I'm not mistaken -- ballpark number. I know there is a fourth pad there, and if the utility has any discussion on potentially adding a fourth reactor down there since we lost five years ago -- it was shut down, not lost -- Oyster Creek, which was slightly under 700 million watts. So, just looking to see if that's the consideration as we're considering and talking about renewable green energy.

Thank you. Thank you, gentleman.

If I can call up Panel 2 for discussion: David Robinson, a professor at Rutgers; Elizabeth -- excuse me for screwing your name, Dr. Elizabeth Cerceo; and, Robin Suydam. And, then, if I can also call up Abe Silverman, Professor at Columbia, and Jesse Jenkins, Professor at Princeton University.

There should be five seats up there. And, again, I apologize if I made a mistake on anyone's name.

Thank you, and, we'll just-- We'll go reverse this time. Last time we started on-- We'll start over here with the gentleman on my right.

J E S S E D. J E N K I N S, Ph.D.: Chairman DeAngelo, Chairman Smith, honorable members of both committees, I really appreciate the opportunity to speak today to the possibilities of enacting legislation to get the State to 100% carbon-free electricity by 2035.

I am Dr. Jesse Jenkins, I am an expert in macro-scale energy systems engineering and clean energy policy at Princeton University. I have to note, though, that my testimony today is my own as an individual. I do not represent the views of Princeton University or any other organization.

In February 2023, Governor Murphy signed Executive Order 315, establishing the goal of supplying 100% of the State's electricity from clean resources by 2035. However, as Chairman Smith alluded in the introduction, New Jersey will not reach this goal unless the Assembly and the Senate move soon to pass legislation to codify that target in State law, and ensure that we have mechanisms to ensure we reach that goal.

Last year, my Princeton research group, the ZERO Lab, conducted detailed electricity system modeling for the whole PJM system, and concluded that New Jersey can reach this 100% clean electricity goal by 2035 while maintaining affordable and reliable electricity supplies. We estimate that if this target is reached by 2035, New Jersey electricity customers would pay no more for their electricity -- for their bulk electricity supply -- than we did in 2019, even under a higher-cost renewable energy scenario.

Additionally, over 20,000 megawatts of new, clean electricity and energy storage capacity would be built in New Jersey. Clean electricity resources in New Jersey would generate over 20% more electricity than is produced by all resources today, including our fossil power plants. The law would support about 24,000 jobs building, operating, and maintaining clean generation and storage plants in the state while preserving all employment at our existing nuclear power plants, and about 96% of employment at existing natural gas-fired power plants in the state. Additionally, the vast majority -- between 75 and 90% of total subsidies provided by State clean electricity programs -- would be received by clean electricity generators in New Jersey, supporting investment and jobs here in the state.

So, today, as the Joint Committee begins work on a new discussion around clean-electricity standards, I encourage you to ensure that this legislation enacts a sound balance between four overarching objectives.

First, establishing effective policy mechanisms to ensure the State reaches its clean electricity goals. Second, supporting the growth and expansion of New Jersey's clean-energy economy and jobs. Third, maintaining affordability for electricity customers. And, fourth, ensuring reliability of the State's electricity supplies.

Last session, Senator Smith introduced the New Jersey Clean Energy Act of 2023, or S2978. As you begin work this session, I encourage you to consider the substitute amendment to S2978 prepared last November as a starting point for consideration. In my professional opinion, the proposed statute struck the right balance between these four critical objectives. That bill would have required New Jersey clean electricity suppliers to procure enough clean electricity to meet 100% of our annual

electricity sales by 2035, with interim requirements from 2027 onwards. These new requirements would build on and incorporate -- not replace -- existing State supports and policies for solar PV, offshore wind, and existing nuclear power plants. It would also establish a trailblazing requirement that 100% of the State's reliability needs are met by clean resources by 2045.

I also encourage you to empower the Board of Public Utilities to harness competitive procurement processes that seek out the most cost-effective resources available, and provide long-term contracts for clean-energy attributes. Rather than mandating further deployment of specific resources like offshore wind or distributed solar, the Legislature could instead establish broad goals for the share of clean electricity from within the state versus from the broader PJM region. Then, we can use competitive, all-clean source solicitations to determine the most affordable portfolio of resources to meet those critical goals.

Crucially, long-term contracts provide revenue certainty for clean-energy developers that makes it easier for them to obtain lower-cost financing. And, that translates directly to savings for New Jersey electricity consumers.

It is also critical that whatever goal the Legislature establishes for in-state clean-energy targets, that the statute contains appropriate safeguards or offramps if insufficient clean electricity is not available in the areas -- is unavailable in New Jersey at a reasonable cost.

Finally, enacting 100% clean electricity standard, or CES, would not harm reliability of the State's electricity supply. First, a CES would preserve the operation of the State's existing nuclear plants for the long term. That's a critical foundation for further progress. Second, the CES would

permit the use of existing natural-gas plants to meet our reliability needs, and would not require retirement of natural gas generators until clean, reliable replacements are available. A CES, importantly, requires qualified clean resources to supply 100% of the State's demand on an annual volumetric basis, but it does not require that electricity consumption in New Jersey is met by clean generators in every hour of the year. That requirement thus permits existing natural-gas plants to operate when necessary to meet reliability needs. That flexibility could allow the State to rapidly and confidently transition to 100% clean supply on an annual basis in just 11 years, without requiring any reliance on novel technologies.

Meanwhile, because clean-electricity markets dispatch wind and solar first -- because they have no fuel costs -- before expensive gas for our generators. A CES would bring on new clean electricity that would still substantially reduce generation from gas plants and slash resulting pollution.

Third, the Legislature should additionally require 100% of our reliability needs are met by clean and carbon-free resources by 2045. And, we don't have to wait to get started on that path, as the Legislature can authorize the BPU to create new programs to support near-term deployment of innovative clean electricity technologies, including long-duration energy storage, advanced nuclear power, or green hydrogen. Scaling up these technologies in the near term is essential to eventually end our reliance on polluting gas-fired power plants entirely.

I want to stress that a commitment like this would be truly historic. No other state in the country with 100% clean electricity standard has committed to actually meet all of our reliability needs with carbon-free

resources as well. But, of course, doing so is key to ensuring the State's electricity supply is truly clean.

Additionally, as we've noted, investing in grid modernization will facilitate this transition by upgrading our grid to handle new interconnections. I want to offer three additional suggestions on the grid-modernization bill.

The first is to ensure that these plans that the utilities develop focus on harnessing and unlocking demand flexibility. Batteries, hot water heaters, energy storage, EVs all have an enormous amount of flexibility as to when they operate. But, we need the right incentive programs to unlock that flexibility. It can substantially reduce the scale of investment and the cost of grid modernization while connecting and taking advantage of more carbon-free resources.

Second, I would encourage not just a single year, but regular integrated distribution planning to ensure that this becomes an ongoing practice for efficient planning of our distribution systems.

And, third, I would direct BPU to study the use of performance-based rate design and incentives, and rate reforms for consumers that would align utility and consumer incentives with the clean-energy transition that we're trying to undergo. I am happy to talk with the Committee more about those recommendations in the future.

I thank you all for your time and the opportunity to testify, and I am happy to answer any questions you have.

Thank you.

ASSEMBLYMAN DeANGELO: Thank you, Jesse.

Any Committee member questions at this time? (no response)

Seeing none, Robin.

R O B I N S U Y D A M: Thank you.

Good afternoon -- good morning, everyone.

Thank you for inviting me today.

I am here to speak in favor of the 100% clean-energy bill and grid modernization to deliver it as quickly as possible.

I am sharing comments as a member of -- a 30-year member -- of the Franklin Mutual Insurance Company Board of Directors, a New Jersey-based company since 1879 that insures over 100,000 homes and small businesses in New Jersey. I am a recently retired independent insurance agent who, for 40 years, insured thousands of families and businesses in Central Jersey. I am a New Jersey homeowner, a farmer, and a local environmental commissioner in Franklin Township, Somerset County, a triangle-sized municipality with water on two of three borders -- the Delaware Raritan Canal, Millstone River, and the Raritan River. And, a commissioner in a town where we are struggling to strengthen local ordinances with a town council that's reluctant to require anything stronger than State minimums.

You get the issue; I hear that clearly today. I am here to speak to the urgency of the issue -- of the financial picture. Consider insurance part of the disaster plan.

At Franklin Mutual, we are literally a mutual; we have no share holders. The company is owned by and exists for the benefit of the policyholders. How do we, as an insurance company, make good decisions for the business and for our insureds, given the reality and impact of climate change in the context of a heavy regulated industry?

The science of insurance is in determining the price to charge today for a policy that will cover tomorrow's loss. We don't know the price of goods sold until long after the product is sold. Traditionally, we've relied on actuaries using historical data, and we use loss control; we inspect our risks; we encourage insureds to take necessary steps -- replace their roof, put in a new electrical panel. We even give them a free app from FMI to help them manage and protect the properties. But what about climate risk? How do we loss control with climate change? We can't just rely on historic data.

Our big concern now are what are called severe convective storms. We typically thought of hurricanes as the big issue, the $10 billion-plus events. In 2023, for the first time ever, the biggest dollar amounts came from severe convective storms. What are they? These are the results of warm, moist air rising from the earth, manifesting as drenching thunderstorms with lightning, tornados, hail, or destructive straight-line winds. Insured severe convective storm losses in the U.S. have grown at 10% annually since 2000.

What about here in New Jersey? We're just like the national figures. Severe thunderstorms are now the highest frequency of billion dollar-plus events since 1980. This is new; we can't project by looking in the past. The severe convective storms are now a part of underwriting, resulting higher water tables; ground saturation; trees coming down; power losses. All of these are increasing the cost of goods sold. Rain storm forecasts now put the insurance company on alert as we prepare for incoming losses. It wasn't this way 10 years ago. A hurricane and its winds, yes; a blizzard with freezing temps, yes; now a simple rainstorm has all hands on deck handling claims.

Anything that mitigates storm damage will bring down the cost

of goods sold. Where are these coming from? You guys all know the data. Remember, warm, moist air rising from the earth. Our temperatures are rising in New Jersey at two times the global average; our precipitation in some parts of the state will be 48% higher by the end of the century than what it is now. Our sea level rise, our coastal flooding, our inland flooding. We have billions of dollars at risk. With 2 feet of coastal flooding -- which will become permanent inundation by 2050 -- we've got 50,000 New Jersey properties worth $4.5 billion. Move that to 5 feet of coastal flooding, that will be permanent inundation by 2100 -- that's 223,000 New Jersey properties worth $40 billion. FEMA inland flooding stats are the same. One hundred-year flood zone, now coming every 10 years, is affecting 360,000 properties. The 500-year flood storm -- we had three of those in the last 13 years -- that's affecting almost 500,000 properties. Where is the disaster protection going to come from?

Here is my concern: What are insurers doing right now? Because of the rising risks, more claims more often being paid out; we are in a hard market for insurance. Right now, insurance companies across the country are going bankrupt -- a dozen each in Florida and Louisiana in the last five years. There is double-digit price increases; companies are pulling out of markets -- you've been reading about this -- Texas, Florida, California. Coverages are being restricted, even at FMI. We used to offer $25,000 worth of backup in sewer and drain and sump pump overflow; now we're reducing it to $3,000.

And, this results in wholesale market movements out of the insurance industry into state plans. A lot of you know about Citizens Insurance down in Florida. They handle the wind -- even *they* are now at

maximum. Where do insurance companies go when they can't go any further? We all buy re-insurance. Well, guess what -- the re-insurance industry is now in a hard market. What are they doing? Getting major price increases; reducing exposures in regions of the country. They're exiting lines of business; they're requiring the underlying insurance companies to bear more risk, and they're putting exclusions on fossil fuel-intensive activities.

In New Jersey, catastrophic re-insurance costs have increased by almost 80% compared to 2018. That's five years. And, all of that gets passed on to our insureds -- your constituents.

The industry is full of adaptation, mitigation, and resilience efforts. It's very laudable; there's lots of great studies, a lot of initiatives happening. Insurance companies are working with banks, they're working with State government, they're working with property owners to improve building codes; pick where we build and how we build. Developing -- build back better endorsements on insurance policies so people have money to do the better thing. They're helping to reduce losses; they're making a difference over time, but it takes money and it takes time and we have to incent people to do it. Because they think, "Oh, the company will pay, the State will pay, I really don't have to make those changes now."

So, where are we going to get effective protection? Dr. Carolyn Kousky, who, among many important titles, is a member of the Federal Advisory Committee on Insurance at the U.S. Department of Treasury in an article published a week ago today said, "One final action insurers could be taking around risk reduction is drawing the link for policymakers, as well as their clients, between weather extremes and greenhouse gas emissions,

because ramping up the phaseout of fossil fuels is the most comprehensive risk strategy." We need the State's help.

In a 2015 speech now famous in the insurance industry, entitled, "Breaking the tragedy of the horizon: Climate change and financial stability," world-recognized economist and insurance regulator Mark Carney spoke to the Bank of England on this topic and he said, in 2015, "If we, the insurance industry, procrastinate, if we get to a tipping point -- especially if that point were to occur suddenly -- it could potentially destabilize markets, spark a hard cycle of losses, and a persistent tightening of financial conditions." In other words, an abrupt resolution such as insurers raising prices, withdrawing from markets -- is that where we are now -- is in itself a financial stability risk.

With feedback between the market and policymaking, climate policy becomes more like monetary policy. I think that's why I'm here, to make that point. Please help Franklin Mutual and the entire insurance industry remain a key, healthy part of disaster planning for New Jersey families and businesses. Our best chance at resilience is a 100% clean energy statute, and we urge the State to invest completely in grid modernization so we can deliver it.

And, I would be happy to try to answer any questions you may have.

ASSEMBLYMAN DeANGELO: Robin, I don't necessarily have a question for you, it's more of a statement.

So, what other states have you delivered this address to?

MS. SUYDAM: You're my first; my own state.

ASSEMBLYMAN DeANGELO: So, one of the problems that I see -- because, as you heard, with our grid, we are a multi-state grid.

MS. SUYDAM: Yes.

ASSEMBLYMAN DeANGELO: So, we could be 100% by tomorrow, but when they're still cranking up the coal burners across the river, there's--

MS. SUYDAM: They affect us--

ASSEMBLYMAN DeANGELO: --there's nothing to go up to the stratosphere to protect us.

MS. SUYDAM: Yes, we have--

ASSEMBLYMAN DeANGELO: One of my major concerns that I have is that our generators are not our carbon-emission problem. It's the vehicles that we're driving in the street, that's our Number 1 problem. So, when they said energy needs, you heard that in my preference from before.

I'm mindful of what you're saying, and respect that, but this-- We've got to get a bigger global look on this for us to make this -- our environment, and issues -- resolved.

ASSEMBLYMAN BARRANCO: I'd like to add to your statements, Chairman.

And, obviously, you are a very well-informed individual. But I think the will to do clean energy is very real in the Legislature. We all have the will for it, and it's good business.

So, I appreciate your comments, but I am going to agree with what the Chairman said. We are trying to get this done, we just want to be smart about it.

ASSEMBLYMAN DeANGELO: Thank you.

Doctor.

DR. JENKINS: I apologize, I have to beg the Committee's forgiveness. I have to depart.

ASSEMBLYMAN DeANGELO: Oh, you have to leave?

DR. JENKINS: Yes, I am due back at the university very shortly; apologies.

ASSEMBLYMAN DeANGELO: Pleasure seeing you, thank you. Doctor.

E L I Z A B E T H A. C E R C E O, M.D.: Hello.

Thank you very much for allowing me the chance to speak on behalf of my patients and my community.

My name is Dr. Elizabeth Cerceo; I am an internal medicine physician. I am an Associate Professor of Medicine, the Director of Climate Health at Cooper Medical School at Rowan University, and a member of Clinicians for Climate Action New Jersey. My views do not necessarily reflect those of my employer.

As a physician practicing in an environmental justice community, I can assure you that the impacts of fossil-fuel combustion are impacting the health of New Jerseyans today, and this will only increase into the future. Steps like tighter air quality regulations from the EPA are needed. But, as we saw just this morning, some of those regulations are already in the process of being walked back, so we can't wait or try to rely on the Federal government to protect the health of New Jerseyans.

The question that we're facing is how many deaths from fossil fuel pollution are just too much, and how small a number is acceptable? There is no question that deaths result from fossil-fuel pollution and climate change; the question is just how many? And, many of my colleagues have

already begun the complex task of modeling, but there are quite literally millions of environmental, social, and political variables. Some calculations put the number into the tens of millions. If you include premature deaths from fossil-fuel pollution, estimates will stretch into the hundreds of millions. A commonly quoted and conservative estimate from the World Health Organization is that one in five premature deaths are caused by fossil-fuel pollution. In New Jersey, more than 17,600 deaths are directly linked to air pollution, based on research out of Harvard's T.H. Chan School of Public Health.

Using an older formula only looking at malnutrition and malaria, floods, diarrhea, and cardiovascular disease, Georgetown University biologist Colin Carlson had calculated that warming already killed more than four million people globally since 2000. This means that deaths from climate change have already exceeded those from all other WHO global health emergencies combined, other than COVID. But, these are deaths not just attributed to pollution.

And, of course, aside from people dying, many more people are made sick from everything from heart disease, diabetes, cardiovascular disease, cancer, stroke, Alzheimer's disease. It's been linked with increased neurologic disease in our children; infectious diseases, we see vectors spread from things like West Nile and Lyme disease and increased hospitalizations, all with very burdensome costs on the health-care industry.

The health effect of many toxic pollutants are often only uncovered years after people have been exposed -- think about the tobacco industry. And, the fossil-fuel industry has picked up the same playbook as tobacco with their executives prioritizing profits over people, trying to sow

doubt. But does anyone have doubt that breathing in thick, polluted air is good for us? Is it surprising that the concentrated pollution of a cigarette and diffuse pollution all around us can cause disease? Unlike tobacco, though, we know that everyone is at risk because we can't choose the air that we breathe. With the EPA definitions of clean air, 36% of Americans -- about 120 million -- breathe unhealthy air. Many counties, including Camden County, where I live, get failing grades for air quality.

While everyone is impacted, some are certainly affected more than others. Nationally, people of color are 61% more likely to live in a county with failing grades for air quality, and Black New Jersey residents are two times more likely to have asthma as white patients. When my patient comes in with lung cancer that has metastasized to the brain, we don't say that this is from fossil-fuel pollution, though now we know from work from Hill, *et al*, at Lancet the exact mechanism of action, how particulate matter can lead to lung adenocarcinoma. And, we know that 20 to 40% of lung cancer results are from fossil-fuel pollution.

When my patient who lives next to a diesel truck stop or an incinerator has a heart attack, we don't usually cite fossil fuels as the cause. And, when a child dies from asthma, we don't link cause of death as pollution -- even though my colleagues in the UK now do.

Decreasing air pollution has direct and immediate health co-benefits to communities that enact these changes, and New Jerseyans would benefit directly from clean energy generated in New Jersey. Numerous studies have shown that health benefits decreased mortality, decreased days of lost wages, which substantially outweigh implementation costs. Often, the costs of change are considered as a stand-alone expense without the context

of the millions of dollars saved in public health and lost work days. As an example, the clean air act from the 1970s resulted in a savings of $30 for every $1 spent. And, time-- And, again, public health measures, provisions that provide for clean air, clean water, and soil, are found to be cheaper than polluting because people maintain their health.

The supposition that the market should dictate decisions ignores the lives lost and the illness caused by fossil-fuel pollution. We must not assume that fossil-fuel executives and their lobbyists have the best interest of New Jerseyans at heart. Rapid adoption of a clean-energy standard should be part of an important public health agenda where lives, health, and well-being of New Jerseyans are all valued.

And, as a physician and as a mother, I am in full support of this bill, and I urge this Legislature to prioritize the lives of our neighbors similarly.

ASSEMBLYMAN DeANGELO: Thank you, Doctor.

And, as we have said before, we are in support of moving ourselves and New Jersey into that clean generation direction, making sure that everyone's health is at the forefront, as always.

Some of the things we need to also strongly consider is, like you said earlier, using *less*. Probably one of the biggest users of electric generation are our data centers. As I look out in the audience, I haven't seen one person without their head down, staring at their device--

(laughter)

ASSEMBLYMAN DeANGELO: --for more than five minutes, let alone their bad eyesight for staring at their stuff. There's a chiropractor

in the room, that's probably why; they'll straighten out their necks, they'll be better out as well.

I say that jokingly, but they use an enormous amount of power, enormous amount of power. So, as we move New Jersey forward, I want to make sure that Jersey generates what it is. I know that those-- We can get power and other programs in other states. Other states don't have the laws that New Jersey has to protect the workers who are doing those installations, with prevailing wages or project labor agreements.

We're just licensing in New Jersey to install our solar panels, and that installation of that system is done by an electrical contractor. That's under the New Jersey Electrical Contractor's Licensing Act. And, it's installed by licensed electricians. I know the integrators, the companies that are out there, that are selling and getting involved with the financing and implementation of this. They maybe partner up, but they have an electrical contract, they're doing that installation. Other states don't.

I know Mr. Jenkins had to run out, and that was some of the problems that we had with last session's language. I don't want to see we can't provide goes to another state. Attorney General told me we can't enforce anything we do in New Jersey in another state, so I'm not chasing it over there.

So, thank you, Doctor.

Any questions for the doctor? (no response)

Seeing none, sir.

If you could just state your name for the record.

D A V I D A. R O B I N S O N, Ph.D.: Good morning; my name is Dave Robinson.

I am a distinguished professor of geography, and the New Jersey State Climatologist at Rutgers University in New Brunswick. I lead the Office of the New Jersey State Climatologist and Rutgers' Global Snow Lab.

I would like to thank Chair Smith, DeAngelo, and their committees for inviting me to testify at today's hearing. The views I express are my own; I am not speaking as a representative of Rutgers, any offices, institutes, or centers in which I participate, or for any colleagues.

My submitted testimony includes more on my background, and also more information regarding the Office of the State Climatologist. In short, the State Climate Office serves as the focal point for activities pertaining to the weather and climate of New Jersey.

We assist a plethora of stakeholders in making informed decisions that directly or indirectly involve a weather or climate factor. We operate the NJ Weather Network, a constellation of 67 stations that observe a variety of meteorological elements every five minutes, making them freely available via our website.

Today I will provide -- be providing -- a brief overview of New Jersey's climate. I will focus on climate and the anthropogenic underpinnings of what has been transpiring in recent decades, along with what the future may hold. Again, my written comments provide additional information that time prohibits me from covering today.

But, first off, the Earth's climate system is remarkably complex. New Jersey's mid-latitude location on the eastern edge of the continent, with a major ocean to our east, leaves the state directly exposed to most every climate variable imaginable. Clashes between cold and warmth trigger significant weather events over the course of any year. This was made

abundantly evident with Sandy, along with New Jersey bearing the brunt of a number of other impactful events this century, including Tropical Storm Irene; Post Tropical Cyclone Ida; and an abundance of record warmth.

There is unequivocal evidence in recent decades that New Jersey's climate is changing, due in large part to human impacts on the global climate system. New regimes of temperature and precipitation are evident, and changes in the strength and frequency of severe events are underway. This is expected to continue in the decades ahead, along with associated changes in sea level. Temperatures have risen throughout the bulk of the past century, but no more so than in the past several decades.

Warming since 1980 is proceeding at a rate of approximately 7 degrees Fahrenheit per century in New Jersey. Eight of New Jersey's 10 warmest years since 1895 have occurred since 2010; 19 of the 20 warmest since 1990. Precipitation since 1980 is increasing at a rate of over 1 foot per century. When it rains, it pours; more of our rain is coming in larger events, and this has led to an increasing frequency of major fresh-water flooding.

Global and regional climates are changing in large measure due to increasing atmospheric greenhouse gases that directly and indirectly are attributable to the burning of fossil fuels -- be this coal, oil, or natural gas. There are other sources of greenhouse gases contributing to change, but the major drivers are fossil fuels. The anthropogenic pollution enhances the Earth's natural greenhouse -- a blanket of gases that make the planet warm enough to be habitable. Increasing the quantity of these gases is akin to placing another blanket on a bed. Solar energy entering the Earth atmosphere system is retained for a greater length of time, leading to warmer conditions. It is also worth adding that over 90% of additional anthropogenic

warmth is being held by the world's oceans -- an effect that appears to be contributing to our coastal state being one of the fastest warming states.

New Jersey's climate will continue to change in upcoming decades. Climate model projections vary due to uncertainty in future emissions of warm and greenhouse gases and other variables as well -- and also due to differences within the models themselves. However, all models continued to predict warming in our region, and steady or and perhaps increasing precipitation.

Projections for the next several decades suggest that no matter how emission scenarios change, New Jersey will warm in the range of 2 to 5 degrees Fahrenheit by mid-century. However, the magnitude of warming in the second half of this century will vary, depending on the quantities of current and future emissions. The fewer fossil fuels consumed, the less warming. Additional warming in the second half of the century may be less than 1 to 3 degrees Fahrenheit, with reduced greenhouse emissions, but as high as an additional 4 to 6 degrees Fahrenheit, with more in the way of "business as usual" emissions. Current and future and near-future actions, or a lack thereof, will have significant climate consequences later this century.

Challenges are clearly at hand as the ongoing climate crisis is addressed. Changes taking place within New Jersey's climate system continue to be recognized by individuals, agencies, and organizations in a multitude of stakeholder communities. This includes energy; health; agriculture; water resource; environment; education; transportation; emergency management; insurance, as we heard; and, certainly, the medical side. A three-pronged approach is needed to face these challenges.

First, it is imperative that all participants ranging from decision-makers to the general public achieve a fundamental understanding of the climate system and how it is changing, along with appreciation of scenarios associated with the impacts of future change -- as a professor; me talking.

With all on a more common-knowledge footing, the next challenge involves employing mitigative actions to reduce changed threats -- in particular, innovative means to reducing emissions of carbon dioxide and other greenhouse gases must be explored and implemented. Society must become less reliant on fossil fuels, and more efficient energy consumption is a must.

Finally, the more that mitigative actions are employed, the reduced burden society will face toward adapting to climate-induced changes. Without doubt, society will have to continue pursuing efforts to improve resilience to threats associated with change. It is just a matter of how quickly and effectively the myriad challenges associated with climate change are addressed that will dictate ongoing impacts.

Again, I would like to thank Senator Smith, Assemblyman DeAngelo, and all on these two committees for offering me the opportunity to contribute to this hearing. I would be happy to follow up with any of you as questions arise and temperatures continue to rise in the months and years ahead.

Thank you.

ASSEMBLYMAN DeANGELO: Thank you, Professor.

Any questions from the Committee?

SENATOR SMITH: Just one.

The-- And, I'm probably putting you on the spot. You're probably not going to answer, but, best case, worst case, when are-- We've already seen the massive flooding -- more is coming. But, in terms of ocean rise, with 133 miles of shoreline, best case, worst case?

DR. ROBINSON: By mid-century, best case would be a foot of sea level rise; 3 feet is possible, but, that's probably when we're looking later in the century. There are a lot of variables involved, we have to-- The oceans are warming. New Jersey-- Well, I should add, New Jersey sea level is rising pretty rapidly for a variety of reasons, including the fact that our land is settling. So, we have to factor that in; we have to factor in ocean circulation off our coast, and, if that's weakening, that can actually help raise our seas.

The oceans are warming; it's remarkable how warm they are right now, globally. Last month, the world's oceans had their warmest month on record. And, I know it's winter in the northern hemisphere, but it's *not* in our water-filled southern hemisphere.

And, then we have to worry about melting freshwater ice on Greenland; glaciers at the Antarctic. So, there are a lot of variables here.

But, I would say, best off, 1 foot of rise by mid-century. Probably worse off in the couple-foot range. But later this century, there is a 5% probability -- a study I was involved with in 2019 out of Rutgers and some other universities -- and they consider it about a 5% chance of a 6-foot rise by the end of this century.

SENATOR SMITH: I would like to say thank you, but--

DR. ROBINSON: (laughter)

(audience laughter)

DR. ROBINSON: Well, you know, if I can add one thing.

I tell the many public lectures I give, we're smart enough to get ourselves into this mess by developing combustion engines and so on, so forth.

I would like to think there are enough people out there who are smart enough to help us deal with this situation through mitigative and, of course, we have to deal with some adaptive consequences. So, there is some light out there.

SENATOR SMITH; Thank you.

DR. ROBINSON: Thank you.

ASSEMBLYMAN DeANGELO: Thank you, Professor.

And, last but not least, Mr. Silverman.

Professor.

A B R A H A M S I L V E R M A N: Great; thank you, everyone.

Good morning.

Thank you to the Chairmans for inviting me to be here today; it's really my pleasure.

So, I am actually *not* a professor. I am an attorney--

ASSEMBLYMAN DeANGELO: We've got you down as one--

MR. SILVERMAN: --who works at Columbia University. I run a program called, "The Non-Technical Barriers to the Clean Energy Transition Initiative," which means that I help legislators and Executive Branch employees figure out how to make all these things actually work. So, that's what I'm going to talk about today. I am really going to start with the grid-mod proceeding, and then also talk very briefly about the CES.

So, just in terms of my background: I spent a decade deploying capital in energy markets and working, really, across the nation on building

new power plants and selling retail electricity. And, then, four years ago, I joined the Board of Public Utilities as the General Counsel, and then Senior Policy Counsel; however, the comments I give today are purely my own.

So, let me go ahead and start with, what is grid modernization? I think you all very much are on the right track here, because the grid-mod proceeding and the clean-energy standard really go hand in hand. The distribution grid is the backbone of our energy system in New Jersey. All the policies that we talk about, whether it's electrification of transportation or buildings, depend on getting that distribution investment out there.

So, what is grid mod? We actually, generally, refer to grid mod as the process of getting the distribution system ready to meet our clean-energy needs in the future. North Carolina State writes a wonderful report where they say, "Grid modernization lacks a universally accepted definition, but it generally refers to actions making the electric grid system, the electricity system, more resilient; more responsive; and interactive." And, so, a lot of the comments that I'm going to provide today are going to talk about, how do we actually get the Board of Public Utilities and/or our utilities out there to do this kind of work?

Tackling grid expansion needs up front -- I really want to emphasize this -- tackling needs up front and having -- allows the utilities to make larger upgrades and avoid a bunch of very small upgrades. Doing it that way in a coordinated fashion is faster and significantly less expensive. When we were with the Board, we looked at this; we studied it; we've made public comments talking about this to the PJM. When you allocate and build and plan your distribution or transmission grid up front, costs go down.

Further, getting the grid ready in advance results in the faster deployment of electrification and distributed energy resources. It really enhances the ability of corporations to attract low-cost capital to deploy in New Jersey. I'm not going to go and talk about a lot about the closed circuits that you heard earlier, but, I mean, I think we all recognize that when circuits are closed, when businesses can't locate in New Jersey, our economic health suffers considerably. So, as we think about this investment, we're not only talking about clean energy, but we're also talking about jobs and economic development opportunities.

So, let me turn to what topics are covered by an effective grid-modernization program. You know, when I think about grid mod, we really think about three different types of investment. First is the expansion of traditional utility infrastructure -- what I often refer to as the poles and wire solution. So, a grid mod can look and say, "What do we need in terms of additional infrastructure," and then have the utilities build it.

The second is utility deployment of advanced technologies on the distribution system that may reduce the need for more poles and wires.

And, the third is innovative market signals and regulatory frameworks that incentivize utilities and customers to make investments that defer additional grid upgrades or make the distribution grid stronger, more efficient, including things like (indiscernible) wires alternatives.

So, when we think about what you're really directing the Board to do here, you're telling them to make -- to have the utilities make investments across those three different areas; however, we need to be very careful to make sure that investment in traditional poles and wires doesn't crowd out investment in technology and market alternatives. And, I think

we all understand that utilities make money based on their rate base, and so they have a financial incentive to put more money into rate base.

We, as regulators -- in my past life as a regulator -- and you all, as legislators, obviously want to cabin that discretion, and make sure that utilities are putting money into the places that have the best return for consumers. This is particularly true -- and, these incentives are particularly there -- when the new investment has some element of operational risk or financial risk, because that increases the possibility that the utility can make the investment and then have the Board come in and say, "No, those investments weren't (indiscernible)." So, we need to provide the utilities with the certainty they need to make sure that they're able to recover these investments.

So, one potential option is to mandate that utilities are required to compare the cost of traditional poles and wire solutions against things like non-wired alternatives or other technological innovation. You can require that their filings with the Board of Public Utilities; they demonstrate this.

In particular, there's three things that I personally would want to see from any utility grid-modernization filing. One is, are they looking at advanced re-conductoring of the distribution lines? So, re-conductors are just a fancy term for the wires that hang between the poles. And, there is new technology out there that can substantially increase the throughput across those wires without redoing a lot of the sort of pylons or the telephone poles and the other infrastructure. So, any type of utility plan should look at that type of investment as an alternative. Of course, it's cheaper for consumers, which isn't necessarily going to make it the default utility proposal. But, I

feel like it's one of those places where we can come in and encourage utilities to do that.

The second is installation of grid-enhancing technologies, or what we often refer to as "GETs," because of course, in the energy industry, we need to turn everything into an acronym. And, GETs have had a lot of discussion at the wholesale level on the transmission grid, but they are coming down to the distribution grid, as well. Again, it's about getting more; using technology to get more out of our existing grid than we currently do.

And, the third is enabling non-wires alternatives. That can be energy storage; demand response; energy efficiency; or distributed energy resources put in the right places on the grid to alleviate the need for more physical hardening or expansion of the poles and wires.

Professor Jenkins talked about this briefly, but those types of incentives where we actually send price signals to consumers on the grid saying, "Hey, this is a good time to consume energy," or, "this is a bad time to consume energy," those are incredibly important.

And, we are talking about doubling the amount of throughput on the distribution system over the next decade -- or, sorry, next 30 years. And, that is even before we talked about things like the data center demand growth that we're really seeing very quickly.

So, how do we do this? One option is to provide a financial incentive to utilities investing in these types of advanced technologies or in non-wired alternatives. And, you can do that by authorizing the Board to have a differential rate of return that pays utilities more when they make the types of investments we're looking for. And, that lessens the sting of going with lower-cost alternatives.

So, one comment I will share -- one concern I have -- is that the short timeline proposed in the legislation may make careful evaluation of these types of alternatives to poles and wires difficult. I'm very concerned that if we have a short review time at the Board, that there is a possibility that third-party suppliers who may have some of these technologies -- third-party investors; people looking at non-wires alternatives -- may be very constrained to come in and participate in the process if the -- if we have a 180-day kind of turnaround.

So, I am very much in favor of doing this kind of stuff quickly, because it is the foundation of everything else we do, but, I do want to caution that we want to make sure we have a robust public process and we don't simply default to poles or wires.

The last thing I want to talk about is the funding of the clean-energy transition. I think we all recognize that increasing the size of the distribution system by 2X comes at a significant cost. So, I was very pleased to see that the proposed legislation includes an allocation of general fund.

There's two reasons for that: One is that there are Federal grant-matching opportunities that are unlocked by the provision of Federal funds -- sorry, of general funds, and, of course, free money from the Feds is always a very nice way to do this.

The second is that they keep doing this at a rate that is -- excuse me. So, supplementing ratepayer funds -- I apologize. Supplementing ratepayer investments with taxpayer funds is an important tool for keeping the cost of the clean-energy transition affordable, particularly to low-income customers who are going to be the first to feel the financial impacts if we continue to raise rates. So, having that $300 million is able to come in and

offset some of those costs, and, particularly when you match it with Federal funds, it looks very attractive.

And, then, finally, I'll say that making those investments up front actually has a real good impact on long-term clean-energy procurement costs. One of the things you'll hear from any solar developer in New Jersey is that it's expensive to do business here, in part because the grid simply isn't ready. As we talk to data-center providers and other entities looking to do building electrification and other investments like that, having the grid ready will reduce the risk and reduce the cost associated with participating.

So, with your indulgence, I'll just talk very quickly about the CES. I largely agree with what my colleagues have said, but one of the things I want to do is point out where we are today. So, in New Jersey, we currently have 40% of our electricity served by nuclear; we have 25% of our electricity -- an additional 25% -- served from Class I renewable energy credits. So, we're already at 65%, just from those two things alone. The RPS standard is scheduled to increase over the next few years to 50%, and, obviously, offshore wind and solar investments continue.

So, as we think about where we are today, we're actually well on our path to 100%. And, actually, from an administrative point of view -- which of course is where I was thinking about, from the Board -- is relatively simple to get there if you increase the unbundled renewable energy credits or switch to a clean-energy attribute credit. They're effectively the same thing, and, that you can get to this 100% standard without endangering system reliability.

My colleague, Asim Haque, I think, did an excellent job sort of talking about this, but I really want to hone in on it. The PJM grid works

with Federal regulators and State regulators to maintain reliability of the grid. They make sure that they have the right generators under contract in the right places to ensure that we have a reliable wholesale grid; nothing we do with the clean-energy standard is going to change that. Reliability remains the purview of PJM, and they will continue to go out and contract for the same resources that are in the market today to meet those reliability targets.

The second thing is I'll just note that this is -- the clean-energy standard under consideration here is well within the mainstream of public options being adopted by other states. Seventeen states now have 100% clean energy or renewable energy requirement, and 15 states have moved from an RPS structure to a CES -- to a clean-energy standard structure -- between 2017 and 2023.

So, I won't go into what the differences are between a clean-energy standard and a renewable-portfolio standard, other than to say New Jersey is really well suited to move to a clean-energy standard structure. We rely on nuclear for such a major part of our energy mix that recognizing the carbon-free attributes of nuclear is really powerful here. It also allows for additional competition between advanced nuclear, potentially clean hydrogen, and other clean technologies as we move forward. Because, at the end of the day, we really do want to encourage that type of competition across technologies.

The last thing I will say is that there's been a lot of questions about in-state renewables, and I want to point out that the clean-energy standard builds on the existing structure we have, which has a strong preference for solar -- in-state solar; for in-state nuclear; and for other in-state resources, including offshore wind. So, as we think about it, really, I often

think about this as a bucket that we're filling, and we will start by pouring into the bucket our nuclear resources that are in-state, that will top it off with solar in-state; offshore wind in-state; and then whatever is left, we will go out and procure from outside. Some of that may be from the state; some of that may be out of state. That's equivalent to the Class I RECs that we use today.

And, as we think about the statute as it's drafted, it is very possible for us to have a preference for, if we're short of our targets, that preference in future contracting can include in-state resources without substantially endangering reliability or changing the fundamental structure of the program.

So, with that I'll stop.

Thank you all very much.

ASSEMBLYMAN DeANGELO: Thank you very much, Abe.

And, any questions from the dais?

ASSEMBLYMAN BARRANCO: I don't have a question, but I have to say something, Mr. Chair.

ASSEMBLYMAN DeANGELO: Sure.

ASSEMBLYMAN BARRANCO: So, first of all, let me just say that the testimony of Mr. Jenkins and yours, Mr. Silverman, are-- First of all, you're very well-informed when it comes to a 30,000-foot view of this problem. And, it's very useful; it's very helpful.

And, as I said earlier, I am in the infrastructure construction business, so my view is more of a 50-foot view. The theory is excellent because it's the basis on which decisions are made with boots on the ground. We need to turn that into something real. So, there's two things I'm going to say.

The first one is based on what Mr. Jenkins said about us codifying this into law. And, the reason I wanted to have this particular Committee Meeting -- and, I want to share with everyone here -- is it doesn't matter what the legislation codifies if it's not feasible. So, I am very glad we're having this conversation; it's very important.

Now, I have made recommendations in the past -- quietly, Chairman -- that this problem really does require a taskforce. A taskforce that can take all of these variables -- because, let's face it, Mr. Silverman, you yourself ran through dozens of variables here today. Not to mention economic engineering -- all kinds of things that are influencing the reality of this or the non-feasibility of this.

You said something *very* important, Mr. Silverman. You used the word, "throughput," which is sort of the theoretical word. But, in our world, we call that "ampacity." Our grid right now has an ampacity that does not support what we want to do, which is what Mr. Silverman was referring to. He said we need to double our throughput. I'm sure that PJM knows what that means; that is a gargantuan undertaking. That is not easy, and we need to be very, very smart about what we try to codify.

And, that's all I'm going to say.

MR. SILVERMAN: Yes, I think that's -- oh, I'm sorry.

ASSEMBLYMAN DeANGELO: Thank you.

Does any other Committee member -- yes, Assemblyman.

ASSEMBLYMAN MARENCO: Thank you, Chairman.

First off, thank you, Chairman DeAngelo, Chairman Smith, for making this hearing happen. This is pretty impressive.

My question is mainly to -- a clarification from Professor Robinson.

Twenty-fifty is stuck in my head; you kept making sure that -- I don't know if that was your goal, but you made it happen.

DR. ROBINSON: Thank you, (indiscernible)

ASSEMBLYMAN MARENCO: You did the job of getting it stuck in our heads.

But, as we know in science, weathermen have jobs because it's never a solid science; everything is moving. Superstorm Sandy was a 100-year event, and we know it happened way before that.

How much and how recent are these numbers, and how fast are they moving away from 2050, where it's coming closer instead of further? Because we know the arctic is melting; we know all those things are happening.

So, 2050 right now, a moment in time as of I don't know how long ago, is the number. But, when does it get revised, and how fast is it moving? I saw your numbers in all your testimony.

DR. ROBINSON: It's a great question.

And, it is a moving target. And, as scientists, we are probabilistic in nature, and that can be very difficult to convey.

But, these numbers are recent. I mean, these are studies done within the last five to 10 years. Climate models continue to evolve; the environment continues to evolve. I mean, let's be straight up -- no one expected the last nine months to be the nine warmest months on Earth in recorded, going back to the mid-19th century, by the margin that they have.

Or, the oceans right now to be about as warm as they normally are in July down in the tropics.

So, there is always going to be surprises there. But, this is topical; this is -- these are recent numbers. They've come a lot closer together in recent years. You have to remember climate modeling, the advent of it was in New Jersey, in part at NOAA Geophysical Fluid Dynamics Lab. It's in middle age. I mean, it's not old age and well-worn. We're still developing better models.

We have better observational systems than ever before. But, what we're talking about is we've got our finger on the pulse of what's going on right now. But, there are -- excuse me -- there are always going to be surprises.

ASSEMBLYMAN DeANGELO: Thank you.

Any other Committee members wish to be heard? (no response)

Panelists, thank you very much for your time.

Chairman.

SENATOR SMITH: Thank you, Chairman.

Our next group will include Mike Maloney from the New Jersey Association of Pipe Trades and the representatives of our gas public utilities: Larry Barth, Director of Corporate Strategy at NJR; Bob Kettig, Manager of Corporate Strategy, NJR; Andrew J. McNally, South Jersey Industries; and Dominic Rocco, and then Robert Gibbs of NRG.

If you would come forward, please.

OK, we do have five.

Mike, you -- Mike, you ended up in a prior panel, but Joe Checkley, IBEW, already spoke. But, we figured you would be a good fit with the gas utilities, so, Mike, how about if we defer to you.

M I C H A E L M A L O N E Y: Thank you, Mr. Chairman.

Thank you, Chairman DeAngelo, Chairman Smith, members of both committees, for allowing me to come here and testify today.

There are pros and cons on this bill so far. Let me be crystal clear: The New Jersey State Pipe Trades are mostly against this bill.

Let me begin with my name is Michael Maloney, I am the Business Manager and Financial Secretary of Plumbers Pipefitters Local 9, and the President of the New Jersey State Pipe Trades. I represent 11,000 members.

The New Jersey Association of Pipe Trades in-person with Local 9 have worked with many of you on critical issues as it relates to ensuring the dependability and reliability of New Jersey's energy grid -- both for its source perspective with the likes of zero emission credits not long ago, or, mostly recently, with hydrogen as well as infrastructure investments.

As we know, New Jersey is the most densely populated state in the nation at nearly 1,300 residents per square mile. That's not new news, but it's a good reminder. In 2022 -- again, this is 2022 -- roughly 51.3% of the energy generated in New Jersey came from natural gas plants, with nuclear power at 43.5%, accounting for much of what remained in the Energy Information Administration -- according to the Energy Information Administration. Renewable resources provide about 8% of New Jersey's total in-state electrical generation, most of it from solar energy. Of that, 8% solar energy accounted for 87% of the State's renewable generation in 2022. The

rest of it is produced from biomass with small amounts from wind and hydropower. In large part because of New Jersey's population density, three fourths of the State's biomass generating capacity is fueled by municipal solid waste, and almost the rest is fueled with landfill gas.

If I may, let me give you some facts about New Jersey's gas-distribution system. New Jersey has 35,000 miles of underground gas infrastructure system that is already built and operating effectively and efficiently today. It has more coverage per square mile than any other state. It services nearly 75% of the residents in our state -- the highest natural gas customer penetration of any state in the northeast. Three million residential customers; 150,000 commercial customers.

We are not sticking our heads in the sand, but when it comes to 100% electrification, we are not going to sit on the sidelines either. Policy surrounding electrification may work extremely well in environmental circles, but for my members, it has two very real outcomes: The cost of living goes way up; the men and women of our union lose their jobs and their livelihoods. Thousands upon thousands of them will lose their jobs. To make matters worse, when we lose our jobs-- But, yet, to meet demand at its peak, members of this body -- *some* members of this body -- are prepared to go out of state, relying on out-of-state energy sources while my members lose their jobs. That's just wrong.

It has been said by many, including Senator Smith, that we in the building trades -- and specifically the pipe trades -- are afraid of the unknown. Well, sir, I couldn't disagree with you more. I know what's coming: If you have your way, our members will get fired, and we're not going to sit by and let it happen without a fight.

That concludes my report, Mr. Chairman.

A N D R E W J. M c N A L L Y, Esq.: Good afternoon, Chairman Smith, Chairman DeAngelo, and members of the Joint Committee.

My name is Andrew McNally, and I am the Senior Director of Government and Regulatory Affairs for South Jersey Industries.

SJI is the parent company of two natural gas utilities in the state -- South Jersey Gas, and Elizabethtown Gas. Together, our utilities provide safe, reliable, affordable gas service to over 725,000 New Jersey customers. Statewide, nearly 75% of New Jersey residents rely on gas service for heating and cooking -- exceptionally high penetration rate compared to other states. SJI also operates various non-utility businesses, including those focused on clean energy. Our commitment to clean energy, however, is not limited to discreet subsidiaries, but extends to every aspect of what we do. In fact, SJI has among the most aggressive clean-energy goals in the industry, including achieving carbon neutrality -- carbon neutral operations by 2040.

I am going to turn a little bit to the electric grid. As good as it is, the electric grid has limitations; from time to time, the power goes out. A majority of the power on our grid today comes from emission-producing sources. And, as we heard from some of the other speakers earlier today, it's not always easy to get new generation sources onto the grid. And, as a system with limitations, we should not expect it to do too much or think that it is capable of satisfying all our energy needs.

Today, demand for electricity is not just growing -- it is soaring. Some of the new demand rises from electric vehicle adoption and proliferation of electronic devices. But, as Chairman DeAngelo pointed out before, a lot of this demand is coming from data centers which process critical

information; operate AI systems; mine for cryptocurrencies; etc. And, as profiled in a March 7 *Washington Post* article, data centers are driving "stratospheric" energy demand, and their power needs far exceed even recent projections. Meeting this incredible demand for power will require major new investments in electric generation, transmission, and distribution infrastructure.

Against this background, some think it's a good idea to burden our electric grid even more by converting natural gas customers to electric heat at scale. Today, demand for electricity is highest in the summer, so our grid is designed for a summer peak. But heating a home with electricity in winter can require up to three times the power needed to cool it in the summer. Therefore, to rely on electricity instead of gas for heating at scale, we'd need a grid designed for a winter peak. To accomplish this, we would need to generate orders of magnitude more power and build out tremendous amounts of new distribution and transmission infrastructure. Electric grid operators, regulators, generators, utilities, and others are all trying to figure out how to satisfy a fast-approaching tidal wave of electric demand. Dealing with this challenge is hard enough, but it may be insurmountable if we seek to have the electric system also handle energy needs currently met by gas.

Therefore, we should continue to invest in our gas system and leverage it to meet part of our energy needs. New Jersey's gas infrastructure, financed by ratepayers, is worth about $17 billion. The gas system is extraordinarily resilient; unplanned gas outages are rare. SJI's aggressive replacement of older infrastructure with modern plastic pipe has made our gas system safer, more efficient, and more environmentally sound. Modern

gas infrastructure can also carry fuels like renewable natural gas and hydrogen.

RNG is sourced from food-waste facilities, sewage-treatment plants, and agricultural activities -- all of which produce methane gas that ordinarily escapes into the atmosphere, contributing to climate change. Instead of allowing this gas to escape, we capture it; clean it; and then use it in lieu of geological gas. RNG is a much lower-carbon fuel and can be carbon negative, depending on how it is sourced. SJI has over 40 RNG projects around the country in various stages of development.

In New Jersey, we are making a nearly half-billion-dollar investment in Linden to construct a food-waste-to-RNG facility. Once operational in the first quarter of 2026, we will be taking in food waste from around the region consistent with the food waste law enacted in 2020 and championed by Chairman Smith. The gas will be directly injected into the Elizabethtown gas system and will reduce emissions in an amount equivalent to saving 30,000 gallons of gasoline per day. To build the facility and its eight anaerobic digestors will employ hundreds of union members from various trades. We are also investing in green hydrogen, a zero-emission fuel made using renewables like RNG. Hydrogen displaces geologic gas and is a fuel that can be transported using the modern gas-distribution system. Later this year, South Jersey Gas will activate its first hydrogen project in Gloucester County, powered by a 1-megawatt solar facility.

Through these clean-energy projects, SJI is helping to make a cleaner, brighter future. Both the gas grid and the electric grid are modern marvels and the result of wise policymaking, prudent investment, and the hard work of thousands over many generations. The gas system dramatically

lightens the load we've put on the electric system, which is especially important as we enter an era of soaring electric demand. Therefore, let's continue to make both grids better, cleaner, and more resilient through investment and innovation. If we improve both systems and don't push either beyond its limits, we can help achieve the clean-energy future we all want.

Thank you.

SENATOR SMITH: So, Mr. McNally, one quick question. And, that is, you said that South Jersey Industries is looking to be carbon neutral by 2040. What's your strategy?

MR. McNALLY: It's multi-faceted. Some of it is involving the rollout of these new fuels like RNG and hydrogen. Some of it is either electrifying or putting our fleet on compressed natural gas, our fleet of vehicles. Some of it is controlling leaks through aggressive pipeline-replacement measures.

SENATOR SMITH: OK, I think next is -- is it Mr. Kettig?

Or, is it -- it's Larry--

L A R R Y B A R T H: Yes.

SENATOR SMITH: Larry Barth.

MR. BARTH: Good to see you; good afternoon.

Thank you to the Chairman and members of this committee for the opportunity to testify today.

I am Larry Barth, Director of Corporate Strategy for New Jersey Resources. I have worked in the energy industry for about 30 years, the last 15 years focused on clean energy here in New Jersey.

I am joined by Bob Kettig, who is the Manager of Corporate Strategy at NJR. Prior to joining NJR, Bob spent over 30 years at the New Jersey Department of Environmental Protection. He was involved in various climate-mitigation activities as well as was a co-author of the State's "80 by '50" Global Warming Response Act.

NJR is a diversified energy company whose core subsidiaries include New Jersey Natural Gas and NJR Clean Energy Ventures. New Jersey Natural Gas is our natural gas utility, serving over 600,000 customers in Monmouth, Ocean, Morris, Sussex, and Burlington counties. NJR Clean Energy Ventures is one of the largest clean energy companies in the state, operating on solar assets around the state.

Today we are going to focus our comments on what you requested, which was input on the Clean Energy Standard Bill, as well as the Grid Modernization Bill.

Let me start with a process-related comment: S237, which we see posted for this Legislative session on the clean-energy standard, appears to be the original version that you, Senator Smith, introduced back in August of 2022. It doesn't comport with the most recent version of the bill that we saw circulating around the time of the November '23 hearings--

SENATOR SMITH: And, there's probably an excellent chance it won't look like the finished product.

MR. BARTH: OK.

SENATOR SMITH: Work in progress.

MR. BARTH: All right, well-- And, that's fine.

Our comments are generic enough to cover each version of the bill. We want to give you some input on the clean-electricity standard in

general. I will be referring, though, to some of the things that were in the November version.

So, we have a couple specific things to say today. First of all, as it relates to the clean energy standard, we remain concerned this bill is going to have potential to export billions of dollars from New Jersey ratepayers to subsidize out-of-state jobs without any real reductions in emissions. So, the bill introduces a new clean-energy credit -- a new acronym we can all refer to, the CEC -- which can be purchased from any clean-energy resource in PJM to comply with the new clean-electricity standard. The CEC works very similar to the Class I RECs which we have now, which are purchased by New Jersey from out-of-state renewable energy projects in PJM to comply with our state's renewable-portfolio standard. And, as the point has been raised earlier, that Class I renewable portfolio standard has increased from 21% in 2020 to 35% in 2025.

I do want to raise the awareness of this Committee -- if you're not aware -- is that next year, with that 35% goal, we are probably going to be spending about three quarters of a billion dollars purchasing RECs from out-of-state projects at current Class I REC prices. So, our RPS, as it continues to grow with no changes based on what's proposed in this bill, there are a lot of dollars that are starting to be impacted here.

Now, in addition to the increasing spend, the issue that we want to spend some time with you on today is that there's no clear evidence that these out-of-state REC purchases produce any real emissions reductions. And, that's really what we're after; we're after real emissions reductions to decarbonize the power sector.

I'm going to let Bob elaborate on that briefly.

Bob.

R O B E R T K E T T I G: Thank you, Chairman, and the entire Committee for allowing me to testify here today.

We need to recognize that the Class I RECs being purchased today can mostly run wind farms in Illinois, Indiana, Ohio, and Pennsylvania -- which are existing projects that were built on an average of 10 years ago. These are not new projects; and, therefore, they are not creating incremental emissions reductions.

We know from-- We know this from DEP's own greenhouse gas reporting, the authority for emissions tracking in the State. DEP compiles the statewide greenhouse gas inventory pursuant to the accounting methodology defined in the Global Warming Responses Act. In that inventory, DEP does not count RECs as offsetting real emissions when they determine New Jersey's emissions in the power sector. The impact of any PJM-cited renewables is already accounted for in the electricity that New Jersey imports from PJM. In their latest report on emissions -- the 2021 reporting year -- DEP indicates power-sector emissions are going up, not down -- a total of 19 million metric tons driven by increased electricity imports from other PJM states. In aggregate, less than 40% of New Jersey's emissions is carbon-free, with close to 90% of that coming from nuclear power.

The claim in the bill that the power sector in New Jersey is 75% emissions free is factually incorrect, and, with the potential to mislead, that much of our work is already accomplished. Before we introduce another clean-energy credit, the CEAC, we should learn from the Class I REC

experience and make improvements to ensure that the purchases result in tangible, incremental, real emission reductions.

In short, we must ensure that the standards have additionality -- a commonly used term in environmental markets around the world, and which includes the following key components:

First, the sources designated to supply clean energy to New Jersey *must* come from dedicated, newly constructed clean-energy generation. Second, New Jersey funds the capital cost of the designated resource associated with the clean electricity it imports. And, third, out-of-state clean-energy generation is counted as zero emissions *only* if two criteria are met: The clean energy resource designated to supply energy to New Jersey are simultaneously producing those megawatt hours in PJM, and, if in that hour of production, New Jersey has the available transmission capacity.

These criteria that I discuss are consistent with how the emission reductions from out-of-state renewables are counted towards in New Jersey's emission-reduction goal when we did the energy master plan. It is also consistent with the standards adopted by the IRS to ensure that electricity used to produce green hydrogen comes from actual renewable sources.

With that, I'll turn it back to Larry.

MR. BARTH: So, in addition to a higher standard of integrity to make sure that the purchases that we're making of out-of-state credits are resulting in real emissions, we also feel it's important for this clean-energy standard bill to prioritize in-state resources and with a firm megawatt commitment to in-state solar.

We recognize this topic attracted a lot of attention in the last hearing, but it is important. Unlike out-of-state RECs, in-state renewables

do produce real emissions reductions. And, rather than sending dollars out of state, let's keep our state dollars -- scarce dollars -- here to support green jobs and economic development.

If you look at National Renewable Energy Labs jobs and economic development model, if we build a gigawatt of solar each year, that's going to produce nearly about two and a half billion in direct economic spend, and an equivalent amount in the multiplier effect from the way the dollars will continue to circulate in our economy. Plus, for once, we are pulling in money from the Federal government in the form of tax credits that reduces the burdens on New Jersey ratepayers to fund clean-energy projects, and not sending dollars out. Let's capitalize on that now so that we can build these projects in state at lower cost.

The good news is that if we meet the goals of the energy master plan now for in-state solar, we can-- This is totally compatible with a clean-energy standard. We can build the offshore wind we want to build; we can keep the nuclear running; and we can meet the 100% standard with in-state resources by 2035.

We are confident that working with our partners in the BPU, the solar industry can be scaled to deliver the numbers that we need to deliver.

In closing, on the topic of grid modernization and system planning, Chairman DeAngelo asked a question, "Can we handle it?" And, I think a number of folks have discussed that today. One of the things we feel is a missing piece right now in New Jersey's energy planning is an understanding of the magnitude of the scale and the cost of upgrades needed to the electric-distribution system in order to meet our goals in 2050.

We've heard today a number of people citing that our throughput may double. Well, actually, if you look at the energy master plan modeling, we've got to go from 20 gigawatts of in-state electric generation capacity to 70 to 80 -- that's a quadrupling. So, when everybody is turning on their heat in January of 2050, we have to have an electric transmission and distribution system that can meet that instantaneous load. And, we need more work to understand what that really is going to take and what it's going to cost. And, grid modernization, we think, is part of that discussion.

So, we look to-- We were encouraged to see Chairman Smith has pre-filed the bill, S236, which requires integrated distribution plans be submitted by the utilities and would recommend that the grid-modernization legislation be considered within that broader context. And, we also feel that integrated distribution plans will provide frameworks for joint gas- and electric-system planning. This is important because we can provide transparency into how the gas and electric system can work together to make system-wide decarbonization a reality without compromising reliability.

And, similarly, gas utilities would like to be able to step up and show how we can support programs that leverage our infrastructure to improve their reliability and resiliency of the electric system.

And, with that, thank you for the opportunity to testify today.

SENATOR SMITH: Thank you as well.

Robert Gibbs -- NRG.

R O B E R T G I B B S: Thank you, Chairman -- both of you, and members of the Committees; thanks for the time today.

My name is Robert Gibbs, and I am the Director of Government Affairs for NRG Energy.

NRG is the leading essential home services company governed by its customer-focused strategy, strong balance sheet, and comprehensive sustainability framework. A Fortune 500 company, NRG brings the power of energy to millions of North Americans. In New Jersey, we have 10 retail brands that serve retail customers. And, I should also note that NRG operates roughly 16,000 megawatts of generation across the country, so, we have a very broad breadth of experience here.

NRG supports New Jersey's efforts to decarbonize the energy sector, grounded -- provided those efforts are primarily driven through one, technology-neutral market mechanisms that support grid reliability; and, two, consumer choice principles that consider affordability.

S237 and A1480 don't quite match these important principles, and I'll tell you why. These bills essentially create a less flexible government mandate of how and when decarbonization can take place. NRG appreciates Chairman Smith's utilization of a renewable-energy trading program, as contemplated in the bills. We believe this can be further enhanced by ensuring such a program is based on competitive market principles to achieve the State's goals.

We note that several State utility regulatory commissions, including New Jersey Board of Public Utilities, are exploring a market mechanism to achieve these exact goals. As you consider the State's decarbonization goals, we encourage you to ensure that such an approach allows third-party suppliers like NRG and our customers to choose their method of RPS compliance. This can include utilization of a coordinated regional auction where state policy preferences are reflected. Such a mechanism allows us and our customers to engage in self-directed

participation which preserves customer choice, which generally -- while generally respecting each participating state's policy preference. If you tell customers that they can only achieve RPS compliance through X percent nuclear, Y percent of offshore wind, and Z percent of solar, you're limiting their options despite their ability of a combination of these technologies to meet the State's goals by asking the market to meet the policy preferences. With a broader suite of clean technologies and a platform that anybody can buy from, you allow customers to choose their path to decarbonization that best meets their needs and price tolerance while still achieving the State's overall clean-energy goals.

Let me just into the grid-modernization bill real quickly. Any taxpayers and ratepayer subsidization of public utility -- of grid modernization -- should incorporate the following policy objectives:

One, establish an opt-out time-of-use rate for the basic generation service. In practice, public utility opt-in time-of-use rates generally do not generate high participation rates. A default time-of-use rate is something that PSE&G already has experience with, and the service it provides to the Long Island Power Authority, which adopted an opt-out default time-of-use rate. These rates provide a foundation for demand flexibility and load shaping, while being essential to reduce the costs of a grid that relies more on intermittent supply staff. At the same time, New Jersey customers would continue to be able to opt in to flat-rate plans by shopping with a TPS for a different time-of-use rate offered by third-party suppliers.

We encourage the Legislature to also encourage the Board of Public Utilities to complete its data access proceeding, which is currently ongoing. That is a critical piece of a smart grid; it is enabling your customers

-- your consumers -- to share their data with whoever they choose to. Again, consent is important here, so that firms like us or the utilities can look at that load shaping and come up with innovative products and services that customers will use. We're talking about behavioral changes here. That's key to the energy transition -- not just letting people continue to do what they've been doing for the last several decades, but encouraging them to look at how they use energy, and to use it more wisely.

And, finally, we encourage the Legislature to allow third-party suppliers to use and compensate customers for virtual power plants. I know that sounds like a new concept. In Texas, NRG is rolling out a virtual power plant concept and plan. Basically what it is is aggregated load through our customers, we're able to control-- It's like a second demand-response program. We're able to control their power usage during times of high stress on the grid, and peak (indiscernible) and reduce that stress. Right now in New Jersey, we're not able to offer those types of programs since it's not in sort of the regulatory framework. And, so one of the things we would like to talk to the Legislature about is how to include third-party suppliers and our customers -- which are a fairly significant load here in New Jersey -- on how to participate and get compensated for that load sharing.

So, with that, thank you very much for the opportunity to speak. I am happy to take questions, and we look forward to working with the Legislature and the front office on this.

SENATOR SMITH: Thank you for all of your comments.

Any questions from members? (no response)

Chairman, take it away.

ASSEMBLYMAN DeANGELO: Thank you, gentlemen.

Next up, Panel 5, we're going to bring in -- if I can -- Anjuli Ramos from the Sierra Club; Ed Potosnak, League of Conservation Voters; and Robert Routh from NRDC.

Good morning.

If you could just start left to right, and say your name for the record.

R O B E R T R O U T H: Robert Routh, Pennsylvania Policy Director for NRDC, the Natural Resources Defense Council.

Thank you, Chairman Smith, Chairman DeAngelo, honorable members of the Senate Environment and Energy Committee and Assembly Telecommunications and Utilities Committee. Thank you for the opportunity to testify today.

As I said, my name is Robert Routh, Pennsylvania Policy Director for NRDC. NRDC is an international environmental nonprofit that works to safeguard the Earth; its people; its plants and animals; and the natural systems on which all life depends.

Since 1970, NRDC's lawyers, scientists, and environmental specialists have worked on clean-energy policies in dozens of states and at the Federal level.

So, I come before you from across the Delaware because I am filling in for Eric Miller, my New Jersey counterpart, who could not be here today because it is his first official day in his new role with the Murphy administration. Eric will be serving as the new Director of Governor Murphy's Office of Climate Action and Counsel on the Green Economy.

As we have for the past several years, NRDC strongly supports S237 and the establishment of a technology-neutral clean-electricity standard

that will achieve the goal of 100% clean electricity in the state by 2035. Establishing this standard is one of the most important steps that New Jersey can take to combat the climate crisis and decrease air pollution that harms the well-being of this state's residents.

This legislation is critical because, not only will it reduce emissions from our power sector, it will also provide clean electricity to decarbonize our buildings and vehicles as well.

So, I am led to understand that the bill before the joint committees today is a work in progress. There is also the more comprehensive legislation that has been introduced since last session. NRDC remains confident in our position that this bill would make New Jersey a clean-energy powerhouse; create thousands of new in-state jobs; provide a guaranteed pathway to reduce emissions in overburdened communities; and ensure affordability for New Jersey ratepayers. The version of the bill that we have seen introduced, if differing from the more comprehensive legislation from last session, would still be a significant step in the right direction and provide many of the benefits to New Jersey that last session's bill did. Let me go through a few of them.

First, it would enshrine into law a 100% by 2035 standard, which, by itself, is critically important. This will steadily reduce carbon dioxide emissions and co-pollutants over the next decade and beyond, and it will ensure that the electricity that powers New Jersey homes and, increasingly, New Jersey's vehicles, is clean.

Second, this legislation will increase economic development and grow the number of in-state clean-energy jobs. According to a 2023 report by Environmental Entrepreneurs -- or, E2, which has been included with my

testimony here today -- New Jersey is the fourth-fastest growing state for clean-energy jobs. The growth of the clean-energy sector is outpacing the rest of the New Jersey economy by 36%, and three out of five new energy jobs in this state are in the clean-energy sector. This didn't happen by accident; it's the result of smart policy like the Clean Energy Act of 2018, which established New Jersey's current renewable portfolio standard of 50% by 2030. The clean-electricity standard established by this bill would obviously take us even further.

Third, this bill adopts a strong standard for what would count as clean energy. The inclusion of co-pollutants in the definition would be an important step to ensure that low carbon or carbon-free resources that are nonetheless capable of producing other pollutants that harm human health would not receive credits under this standard. This would make New Jersey a national leader in reducing co-pollutants alongside the greenhouse gas emissions that are driving the climate crisis.

And, then, fourth, this legislation would be technology neutral. A technology-neutral standard allows New Jersey to achieve its targets by leveraging technologically and geographically diverse resources. It leaves room for innovation by project developers, and it would drive toward more competitive projects, thereby ensuring that electric rates are more affordable.

And, finally, a technology-neutral standard provides more flexibility and resiliency to achieve New Jersey's targets. No single type of project or resource would cause New Jersey to miss its targets under this bill.

So, these conclusions are supported by NRDC's own modeling on a 100% CES target -- again, copy which is included alongside my written testimony. Our Director of Policy Analysis looked at this legislation and the

significant impacts of the Federal IRA, finding that -- I'll just summarize -- a 100% clean-electricity target can be met through a diverse set of resources and will steadily decrease not just carbon dioxide, but co-pollutant emissions over the next decade. Our current RPS target of 50% by 2030 and New Jersey's nuclear fleet positioned this state well to achieve 100% target with additional policy signals, like in this legislation, would keep existing gas and nuclear fleets online to retain both reliability and affordability, increasing our state's -- our total in-state generation. And, the legislation would reduce New Jersey's reliance on both total electricity imports and out-of-state clean energy to meet the RPS and new CES targets.

By every single measure, New Jersey would be better off with a CES like the one contained in this bill than without it. For that reason, NRDC urges the Committee to advance this legislation in its next voting session.

So, to close out, NRDC was proud to be one of the many stakeholders that worked on last session's bill, and we are keenly aware that numerous stakeholders work in good faith to design a bill that would be perfect for New Jersey. That said, New Jersey has apparently been discussing a 100% by 2035 bill for years at this point, and we cannot let the pursuit of a perfect bill prevent us from acting on the opportunity before New Jersey now to equitably reduce emissions and increase the share of clean electricity generation in New Jersey.

NRDC and our team remains committed to working in good faith with the Legislature, the Board of Public Utilities, the Governor's Office, and all interested stakeholders on this critical topic moving forward.

So, thank you again for the opportunity to testify, and I'll be happy to take any questions Committee members may have.

ASSEMBLYMAN DeANGELO: Thank you, Robert.

Anjuli.

A N J U L I R A M O S - B U S O T: Good afternoon.

Chairman Smith, Chairman DeAngelo, and members of the Senate Energy and Environment Committee and Assembly Telecommunications and Utilities Committee, thank you for the opportunity to testify today at this joint hearing.

My name is Anjuli Ramos, and I serve as the New Jersey Sierra Club Director.

Today, I am speaking on behalf of over 100,000 members and supporters here in New Jersey and 3.8 million nationwide that, above all, are eager for and demand a future where we no longer rely on fossil fuels. Sierra Club strongly supports a clean-energy standard with the goal of 100% clean electricity by 2035, and the modernization of our grid.

We would like to start by sharing that, right outside the statehouse, just before this hearing, numerous environmental community, environmental justice, and labor organizations -- including us, New Jersey Sierra Club -- and the public rallied together in support of a clean-energy future that tackles climate change and pollution head on.

The CES lays the groundwork for a robust clean-energy economy powered by renewable and clean energy, primarily built right here in New Jersey. As we all know, New Jersey is on track to achieve 75% of its annual energy usage by 2025, and 84% by 2030 through renewable and nuclear energy. However, the current renewable generated electricity consumed by

the State comes mostly from out of state. And, it is crucial to keep in mind that there is *nothing* in the current law that ensures the continued build-out of large-scale renewable-energy or clean-firm power plants in New Jersey.

Therefore, establishing a clean-energy standard for 2035 ensures that New Jersey is investing in large-scale renewables and clean-energy projects such as solar, offshore wind, and storage today in order to power our homes and vehicles tomorrow. By 2035, a CES is projected to help build 8,300 megawatts of new large-scale solar; 7,500 megawatts of offshore wind; and 1,600 megawatts of storage capacity. The remaining zero-carbon resources would be from low-cost renewable energy competitively procured from across the PJM, keeping prices affordable.

It is essential for New Jersey to enact in statute its policy vision of 100% clean electricity by 2035, as it would have massive positive economic, job, and health impacts for the state. As stated before, we currently are a net electricity importer, and the majority of that electricity comes from intense extractive processes like coal mining and fracking, and generated through the burning of coal and natural gas from states in the PJM regional grid like Pennsylvania, Ohio, and West Virginia. Unfortunately, New Jersey is directly downwind from these states, and the pollution from all of these processes lands right here in our beaches, backyards, and playgrounds. Pollution does not obey state lines. Often, it is downwind pollution itself makes the state reach unhealthy and hazardous air, and sets off air-quality alerts. And, it is one of the main reasons as to why New Jersey is currently in non-attainment status for the Federally designated ambient air quality standard for ground-level ozone.

Now, you may be wondering, "What do I mean by pollution?" That's such a broad term. The main objective of the clean-energy standard is to move us away from the burning of carbon so that we directly tackle climate change and its impacts. However, it is significantly important to know that it is not the emissions of carbon dioxide -- or even methane -- that makes us sick. It is the associated pollution that comes from all these processes, which we often refer to as "co-pollutants" or "air toxics." Some of the most potent ones are nitrous oxide -- or, NOX; sulfar oxides, or SOX; particulate matter; ground-level ozone; volatile organic compounds; benzine; and hydrogen sulfide; and the list goes on and on.

The burning of carbon generates much more than just electricity, which is why it is imperative to include the associated pollution in the CES. Carbon and co-pollutant emissions are interconnected, and therefore must be jointly phased out. Sierra Club *strongly* supports the inclusion of co-pollutants in the clean-energy definition because of the stated before, and so that the technology innovation that will be triggered to achieve this goal is both carbon and co-pollutant free.

The achievement of 100% clean electricity by 2035 can directly displace coal, gas, and fossil fuel reliance from our regional grid; cleans our air; and bring relief to people who suffer from asthma, heart disease, and other medical conditions directly associated with the burning of fossil fuels. Additionally, a CES can dramatically reduce emissions across every sector of the economy, further creating a future with cleaner air and healthier communities. The fossil fuels we burn in our vehicles and buildings make up the top two sources of emissions in New Jersey. Not only can we lower emissions from these sectors in the short term by upgrading our homes and

vehicles to electricity, but achieve even further reductions by ensuring our cars and homes are powered by clean, renewable energy.

I would like to switch gears a bit now and focus on the powerful potential for economic and job growth for the State. New Jersey is already a leader in clean-energy jobs with the clean-energy sector growing 2.5 times faster than the state economy. As pointed out by my colleague, a new report by *Environmental Entrepreneurs* -- which is incredible, I advise everybody to read -- shows that New Jersey is the fourth fastest-growing state for clean-energy jobs in the country with 56,000 jobs accounted for in 2022 -- specifically jobs in battery storage and grid modernization. And, grid modernization grew 8.5% in 2022, and has grown more than 15% since 2021. With the CES and historical investments in grid modernization, New Jersey will create tens of thousands of new family-sustaining in-state jobs in the next decade for roles inclusive of building, operating, and maintaining lighter electricity generators -- and additional thousands of other jobs in large-scale solar and offshore wind, while preserving our nuclear and gas fleets for reliability purposes.

Lastly, a number of leading organizations have looked at what the transition to clean energy is going to cost, and they all have reached the same conclusion: Energy bills do not go up, particularly given the once-in-a-lifetime opportunity of clean-energy incentives provided by the Inflation Reduction Act. New Jersey is said to receive massive Federal investments from the Inflation Reduction Act to help affordably upgrade our electric grid and deploy large-scale renewable-energy resources. Thanks to these investments and the leveraging of low-cost renewables, New Jersey can

achieve a 100% clean grid at a deep discount, making the State's carbon-free electricity goals cheaper to achieve on a faster timeline.

The time to act is *now*. New Jersey can set the tone for the nation with a protective full commitment for 100% clean electricity by 2035, while providing economic and job growth; healthier air to breathe; and curbing the devastating impacts of climate change.

Thank you.

ASSEMBLYMAN DeANGELO: Thank you.

Ladies and gentleman, what I am going to ask-- We are about three hours into this hearing. We're starting to hit the repetitiveness, so, if you were planning -- one of the 15 individuals coming up to testify -- please try to be aware of the testimony that was earlier on today. Because, I've heard very repetitiveness in the past couple speeches. I get it; I understand it; we're just trying to make sure everybody gets an opportunity to be heard, as we have 15 more people and we are halfway through.

Ed, the pressure is on you not to repeat.

E D W A R D P O T O S N A K III: No worries.

Actually, it's interesting you say that. My opening remarks said, "Good morning," so I will say: Good afternoon, and thank you for your patience to the many Chairs and members of the Committee that we have here today.

Ed Potosnak, New Jersey League of Conservation Voters -- Executive Director.

I am here today to speak about the 100% clean-energy bill and grid modernization, the amendments that Jesse Jenkins talked about; but also

a strong definition of clean energy to make sure that we are reducing those co-pollutants that my colleagues have spoken about.

To put it clearly, the 100% clean-energy bill will save lives. It is going to make sure we have cleaner air, which saves lives. It's going to make sure we have cleaner water; that's going to save lives. We're going to have less catastrophic storms; that's going to save lives. New Jersey LCV, our organization, is the statewide political voice for the environment. We elect environmentally responsible candidates and hold our elected officials accountable for policies that support and safeguard the health of our communities, the beauty of our state -- which we also much love -- and the strength of our economy.

In the past year, we've seen wildfires rage across America; we saw wildfires as far as Canada make their way into our air. And, that is what climate change looks like. These things are apocalyptic, but they are happening at a more frequent, intense-- And, my neighbor, Robin Suydam, talked about that from the insurance industry's perspective. We've seen record heat passing, yet again, the hottest year on record in 2023, which is bad news for those of us who like to ski. It's getting harder to get out on the slopes. That is also an economic impact, as much as a joy that we miss.

We've seen millions of dollars in damage due to flooding. Just a few weeks ago, we saw catastrophic flooding across the Garden State. This past weekend -- right now -- we're seeing huge winds and flooding. I mean, the hydrometer near me is off the charts. This past year alone was just a snapshot, but you can look back to Superstorm Sandy; Ida -- my neighbor is still out of their home from Hurricane Ida, just down the block from me. New Jerseyans are losing their homes; their possessions; their businesses; their

loved ones, due to flooding, fires, and storms. Climate change is no longer that far off a problem that people talked about. It's here today. It's hitting in our lives, our health, and our pockets.

And, I just want to thank Senator Smith and Chairman DeAngelo for your tenacious efforts to move forward a leading legislation to get us to 100% clean energy -- renewable energy -- by 2035. Not only will it help to combat climate change, which many folks have described, but it's going to create good local, family-sustaining jobs, and improve public health and reduce pollution and address flooding.

And, I said it before, I'm saying it again: It will save lives, this 100% clean-energy legislation. And, it may not seem so far away, 2035, but we're already on track to achieve this goal. The 2018 clean renewable energy bill and the nuclear subsidy law -- thank you, Chairman DeAngelo for your support for that -- puts us anywhere from 75% to 84% of the way there, leaving us just about 15% more to go -- that's what we're really here to talk about today. And, those Class I renewable energy credits for 50% are solar and wind -- the cleanest energy that we can make, each year increasing about 6%.

Folks also mentioned -- I'll just reinforce; not to be repetitive, but I think it's important--

ASSEMBLYMAN DeANGELO: You are being repetitive.

MR. POTOSNAK: It happens if you go a little bit later, but--

ASSEMBLYMAN DeANGELO: You're good--

MR. POTOSNAK: --my mom always said -- and, I was a teacher -- you've got to repeat things a few times.

But the Inflation Reduction Act -- a *huge* investment in money on the line for the State of New Jersey. This is a huge moment, and I don't know if folks emphasize that enough--

ASSEMBLYMAN DeANGELO: So, I will say this: I will be mindful of the term, "talk the starving dog off a meat wagon." When you have a committee up here looking to go in that direction, and you say it too much, we pull ourselves off.

Thank you, Ed.

MR. POTOSNAK: No, I appreciate that.

And, I think it's important--

ASSEMBLYMAN DeANGELO: He still doesn't take the hint.

MS. RAMOS-BUSOT: (laughter)

MR. POTOSNAK: No, it does.

I'm going to say something that I think that's been--

ASSEMBLYMAN DeANGELO: Thirty seconds, please--

MR. POTOSNAK: --which is, I don't think that we should wait. I know it's something that was talked about here. New Jersey has been a leader in a number of things.

In fact, on November 20 in 1789, New Jersey was the first state to ratify the Bill of Rights. No one talked about that today. In addition, New Jersey was the first state to mandate recycling. New Jersey was the first state to mandate climate-change education. New Jersey was the first state to hold gun traffickers criminally liable.

And, I think, in the words of another leader, "If not us, then who? And if not now, when?" And, that was John Lewis. And, I think that, in addition to saving lives, the 100% legislation will also do a lot for our state

to raise the bar for other states across the nation. And, that's something I think that's critical, in addition to the jobs.

In Elizabeth, New Jersey, four people lost their lives in Hurricane Ida. All four of them were low-income; all four had limited mobility or were on the first floor and were literally drowned in their homes. So, this is a life-or-death situation, and it requires us to act and to push the system. It's not going to be comfortable, just like it wasn't comfortable for the folks who drowned.

And, I am saying that from the bottom of my heart as not only an environmental activist, but a lifelong New Jerseyan. I appreciate your attention and patience.

ASSEMBLYMAN DeANGELO: Thank you very much.

Panel is dismissed.

SENATOR SMITH: And, let us call panel Number 6.

MR. POTOSNAK: I thought we were going to get questions.

MS. RAMOS-BUSOT: Yes, where are the questions?

These are-- Oh, there were questions?

ASSEMBLYMAN DeANGELO: You already repeated them all, so we're good. We (indiscernible)

MR. POTOSNAK: (laughter) I'm just--

SENATOR SMITH: OK, so, panel Number 6 are the environmental justice groups. We have Brooke Helmick, the Law and Policy Manager of the New Jersey Environmental Justice Alliance; we have JV Valladolid, Environmental Justice Organizer, Ironbound Community Corporation; Sharonda Allen, NJPEEC -- Executive Director of Operation

Grow; and, Jessamine De Ocampo, Associate Attorney, Clean Energy Program, Earth Justice.

Why don't we start on this side and we'll go this way.

Take it away.

J E S S I C A V A L L A D O L I D: Hi, can folks hear me?

I was actually going to end. I know I probably can't decide that on my own--

SENATOR SMITH: It's OK, (indiscernible) we're easy to get along with.

And, if you would start.

S H A R O N D A A L L E N: Is this thing on?

(laughter)

SENATOR SMITH: Yes

MS. ALLEN: Good afternoon.

Thank you, Chairman Smith and Chairman DeAngelo for bringing S237 and A1484 today.

My name is Sharonda Allen, Founder and Executive Director of Operation Grow, Inc.; Chapter Co-Chair of the Greater New Jersey Gateway Climate Reality Project; Tri-County Sustainability EJ Co-Chair; and, Steering Committee Member of the New Jersey Progressive Equitable Energy Coalition -- or NJPEEC -- chaired by Mr. Marcus Sibley, which is a Black and brown-led coalition advocating for a 100% clean-energy transition that keeps energy affordable and accessible to all New Jersey families.

It is an honor to be here today speaking about the importance of clean renewable-energy access to New Jersey communities, and the most monumental clean-energy bills New Jersey has seen to date. NJPEEC works

to bridge the equitable gap in energy justice to ensure inclusivity from the inception to implementation of policies and proposed energy reforms. We engage stakeholders to help them understand the impact, sense of urgency, and landscape of proposed policies on local communities statewide, and we advocate to bring good-paying, clean-energy jobs to our home state of New Jersey while keeping energy prices affordable.

We stand here with and because of the many advocates who have begun carving an equitable, clean-energy future for our loved ones. We acknowledge the work that has been accomplished, and in partnership, we join advocates in organizations in the fight.

When we consider the major strides in society, too often weathering conversations, policies, and implementation, we do not take enough consideration of Black and brown low-income or other historically marginalized community members. But, we can do better -- we *must* do better in our clean-energy transition. We can do better by ensuring that as we transition to cleaner, better energy sources, local residents in need of decent work have equitable access to workforce development, apprenticeships, and other good-paying job opportunities. We can do better to protect communities overburdened by air pollution from harmful facilities by creating strong definitions of what clean energy truly is and means. We can do better to ensure that people and their paychecks, *not* corporations and their profits, are protected from the hardship of significant energy price increases or fluctuations.

Due to historic policies and practices such as redlining, polluting facilities are disproportionately located in low-income and communities of color, often considered sacrifice zones, that allow other areas to utilize energy

without the burden of pollution. However, we must name these facilities and begin dismantling the harmful results borne from these practices. Trash incinerators, one of many energy-generating facilities that releases toxic fumes that harm human health, receives renewable energy credit -- I'm trying to talk fast. This is in the name of turning trash into treasure; where we treasure energy over the health and well-being of specifically Black and brown or low-wealth community members. We do not accept this; we cannot accept this. Incineration is *not* clean.

(audience applause)

MS ALLEN: Thank you.

It is important to lay out a plan to get New Jersey to 100% renewable energy while avoiding dirty fossil fuel sources. We need a strong plan that only allows real renewable energy to earn incentives and classifications as renewable. Any energy that involves transfer or use of methane should be avoided. With a burgeoning offshore wind industry on the eastern coast of the United States, it is imperative for New Jersey to open its doors for employment, sustainability, and equity that will create a smooth energy transition. Equity that will reduce pollution and cost, bringing environmental and energy justice to our state.

We want the State of New Jersey in the forefront of renewable energy, and we must have legislation that supports the growth of our economy. There is an entire ecosystem of careers that will spring from developing clean, green energy, while mitigating adverse health conditions for all New Jerseyans -- especially the most vulnerable residents of our state. We deserve a healthier environment for all New Jerseyans.

(audience applause)

J E S S A M I N E D e O C A M P O, J.D.: Hello, my name is Jessamine De Ocampo, and I am an attorney with Earthjustice.

Earthjustice is a nationwide environmental law and nonprofit, and we are here to uplift the concerns environmental justice organizations and leaders have made today.

I would like to start by thanking Chair Smith and Chair DeAngelo for the opportunity to provide verbal testimony, and we appreciate all the individuals in this room who are working to consider all perspectives on this bill.

The State has an opportunity to ensure policy outcomes are aligned with the State's fiscal resources by defining clean energy to be truly clean. As such, our testimony today is focused on two topics: Incinerators, and a protective clean-energy definition for clean-energy production facilities.

New Jersey is one step away from leading the nation in establishing the most protective clean-energy definition, putting a stop to the practice of designating "sacrifice zones." As climate policy has developed, there has always been a need to adjust the global impacts of climate change, as well as the local harm that comes from fossil fuel-emitting sources. Many states that have passed clean-energy standards have focused solely on the global aspects, limiting their emissions to greenhouse gas. But here, we are advocating that New Jersey include co-pollutants in the definition of a clean-energy production facility.

Incinerators present a good case study of what could happen if this law has a lax definition of clean energy. Incinerators have received over $20 million of ratepayer subsidies annually, in both 2021 and 2022 alone. And, that amount is steadily increasing. Incinerators in New Jersey are

among the top three emitters of co-pollutants like lead, smog-forming nitrogen oxides, and dangerous forever chemicals like PVCs.

This pollution -- as you may have just heard from an environmental justice leader -- has real effects on the front-line communities living in the vicinity of these facilities. These communities experience increased rates of health harms, including but not limited to respiratory issues; pre-term births; miscarriages; and cancer. To make matters worse, incinerators across the state are consistently violating their permits, which outline the very basic standards they are supposed to meet. Since 2004, New Jersey incinerators have had over 1,700 violations of their air permits.

We are asking for a simple solution: Do not let incinerators get subsidies if they violate their permits.

(audience applause)

MS. De OCAMPO: So, what lessons can we learn and take from this case study?

We make sure this bill has a stringent, protective clean-energy definition. Co-pollutants must be included in the definition to disallow false solutions, like renewable natural gas and hydrogen combustion in the power sector, from obtaining ratepayer subsidies. True clean-energy resources have lots of cost advantages over gas power plants that we currently rely on.

And, you've heard this a lot today, so I'll condense my points. They have zero fuel cost; they have low operations and maintenance costs; they have sharply decreasing construction costs; and they can obtain those Federal tax credits that we've heard. If the bill defines clean energy properly, this will be an energy-affordability bill.

Let's talk about reliability. Right now, we are over-reliant on gas power plants, which provide more than half of the state's electricity. Every winter storm exposes more reliability issues with these plants. Meanwhile, renewables performed as forecasted during winter events and even made up (indiscernible) and gas plant outages. Again, if this bill defines clean energy properly, this will be an energy reliability bill for the State of New Jersey.

To sum it up, giving subsidies to a false solution like incinerators was a mistake -- a mistake that has cost New Jersey over $130 million in ratepayer subsidies. Let's use this bill to fix that mistake, and let's learn from it. The State has a chance to truly advance a just, clean-energy transition and protect the neighborhoods that have historically bore and presently bear disproportionate harm. We ask that the Legislature push forward with what could be a historic opportunity.

Thank you.

(audience applause)

B R O O K E H E L M I C K: Good afternoon, everyone, it is a pleasure to be here.

And, thank you to Chair Smith and Chair DeAngelo for their leadership in facilitating this joint hearing, and for the opportunity for us to speak before you today.

My name is Brooke Helmick, and I am the Law and Policy Manager with the New Jersey Environmental Justice Alliance, or the NJEJA.

We are a 20-year-old alliance of New Jersey organizations and individuals, and are the first and only statewide organization that is exclusively dedicated to environmental justice. We are also the only statewide environmental organization that is led and has our membership be

predominantly people of color. Much of what you'll hear from me grew out of the work of alliance members and our allies over the last 20 years.

I am here today to share with you our perspective on a few key issue areas, including the definition of "clean-energy facility," "co-pollutants," and "mandatory emissions-reduction policy."

First, in the details of the definition itself. The definition included, "Allows *de minimis* emissions to be determined by the DEP." We want to be clear that *de minimis must* mean as close to zero in terms of pounds of emissions in any given hour. The only other legal definition of *de minimis* -- that we know of -- is the EPA definition under the Clean Air Act, which allows between 25 and 100 tons per year for various co-pollutants. We need our regulatory agency to be looking at a *de minimis* definition that is close to zero as possible.

Furthermore, with regards to the term "net emissions," we generally object to this language because the facility could produce significant pollution in an over-burdened community and still claim net zero emissions by using offsets at other locations. We've already seen incinerators make claims of net zero emissions, and, as my colleague before me said, these are false solutions, as they allow pollution to simply be displaced from one area to another, thereby harming communities that host this facility.

The last piece that we want to bring to your attention is the use of "or" in two places of this definition. We need to be sure that the definition requires facilities to demonstrate zero greenhouse gas emissions *and* zero co-pollutant emissions. And, additionally, that the facility would emit zero emissions at the point of generation *and* at any point in the supply chain.

Now, I'll transition now to speak candidly about the urgency and the necessity of ensuring co-pollutants remain an integral component of this bill. I recognize that folks earlier in the day have referenced this, but I think it's imperative that I address it as well, as the EJ perspective approaches this concept through the lens of lived experience, which is something that only we can bring to the table.

The inclusion of co-pollutants into climate policy is not a new concept, and the environmental justice community has been working on this issue for a long time. And, Dr. Nicky Sheats, who testified in November and sits as the Chair of the NJEJA board, has been a leader in this area. We're grateful to see that the bill includes co-pollutants, because engaging in mandatory emissions reductions not only supports climate-change mitigation, but, it provides real and immediately felt impacts to communities disproportionately impacted and over-burdened by pollution. Any New Jersey policy must address co-pollutants. It must do so specifically, and it must do so explicitly, because the stakes have never been higher.

We don't accept an argument that these pollutants are relatively small in emissions compared to greenhouse gases, as there are serious health risks for the communities who live around these plants that emit these co-pollutants, as you've heard today. So, it is imperative to recognize that co-pollutants such as fine particulate matter have no lower threshold for health benefits.

As you know, in EJ communities, communities of color, and low-income communities -- whose demographics often overlap -- there's a disproportionate amount of pollution and co-pollutants produced by energy infrastructure go into making a disproportionate amount of this pollution.

And, as we've said, there are unjust and disproportionate health impacts of these pollutions, and these health disparities are intrinsically connected to and rooted in race and income in the United States. Because of this, our stance is that if a climate-mitigation policy doesn't address both climate change and local air pollution through co-pollutant mitigation, then it's not an effective policy.

And, now, we recognize that this isn't-- This is a difficult stance to take. But, we think that it's imperative to maintain this position, because people are getting sick, and they are dying from local air pollution. If we could have lowered local air pollution while fighting climate change, our loved ones who were killed by local air pollution wouldn't be brought back to us. This is life and death for many across the state, and that's why it's essential that we keep "co-pollutants" and address it as an integral part of this bill.

For us, the bottom line is -- to borrow a phrase from my colleagues at the Ironbound Community Corporation -- a clean-energy law must be "squeaky clean." To be truly clean would mean having a nation-leading definition of clean energy; to be the first state to have such a strong definition; and set a high standard of protection for all of our residents. Without being truly clean, we leave behind front-line communities and exacerbate already existing problems of pollution; poor air qualities; and health disparities. So, I will say again: Clean must be "squeaky clean."

Lastly, despite the encouraging step forward in clean-energy procurement mandates, there are no guarantees that energy produced in New Jersey will be clean, and we recognize, though, that a bill can't do everything. So, we think that by including and placing an emphasis on co-pollutants in this bill, addressing the question of *de minimis*, and fine-tuning the definition,

not only can we get a nation-leading definition, but we can open the door for legislation that does not speak specifically about energy produced in the state -- or, that does speak specifically, I should say.

So, we look forward to coming back to speak with you about mandatory emissions reductions and opportunities for a rule or a bill that compliments this clean-energy standard.

And, we thank you again for your leadership in considering this bill, the opportunity to testify, and I welcome any questions that you may have for me.

Thank you.

(audience applause)

MS. VALLADOLID: Hi, thank you for having me.

My name is Jessica Valladolid -- I go by JV -- and I am a lifelong Newark resident, and I am also an Environmental Justice Advocate with the Ironbound Community Corporation Environmental Justice Team.

My colleague at NJPEEC mentioned incinerators. Our-- New Jersey's largest garbage incinerator is located in New Jersey, and it is as old as I am. So, you can Google that.

And, I just wanted to begin by just sharing regards from the Deputy Director of Organizing and Advocacy at Ironbound Community Corporation, Maria Lopez-Nuñez, who is currently attending the Aspen Climate Leadership Summit in Florida.

So, today, I stand before you not just as a speaker, but as someone who has lived and witnessed the harsh realities of our current environmental justice landscape in Newark. Our communities are not just statistics or abstract concepts; we are real people. We are real people living

in a 4-square-mile neighborhood who have three existing fossil fuel power plants and the threat of a fourth.

The Ironbound has been fighting for the basic right to breathe clean air for over 30 years. When we talk about what constitutes clean, we must not overlook the lived experiences of those affected by it. The pollutants these toxic facilities emit have real consequences, from the particulate matter -- 2.5 -- that was mentioned, to the toxic trio of lead, arsenic, and nitrous oxide, resulting in respiratory diseases and alarming rates of asthma that far exceed the national average. These toxic pollutants make us sick every single day, and we cannot turn away from this reality.

Carbon reduction is crucial, but it cannot be the sole emphasis in our fight against climate change. We must confront decades of abuse stemming from existing power plants, which have been allowed to operate with little to no regard to public health. Our lawmakers must prioritize public health in their decisions. It is not an option -- it is a necessity, and it must be clearly codified in the bills that are passed.

We cannot afford to lock in a future that perpetuates harm. We must strive for a just and equitable energy future, one that values reducing carbon emissions just as much as it does reducing co-pollutants. The health of our communities is at stake, and we must not settle for half-measures. For communities facing the brunt of climate change today, passing laws that are not truly clean is the same as not passing any law at all. We must recognize the importance of co-pollutant laws and regulations as much as we do carbon mitigation.

In conclusion, let us take a stand against anything that dilutes our efforts. Let us fight for communities like the Ironbound. The very air

we breathe can only ever imagine to be improved by the highest clean-energy standards, and we ask that you prioritize public health in the pursuit of this sustainable future.

Thank you.

(audience applause)

ASSEMBLYMAN DeANGELO: Thank you, ladies.

Any questions? (no response)

Seeing none, thank you for your testimony.

All right, next panel coming up -- and, they were added on, and they were prefaced. From our Advanced Energy United and Environmental Defense Fund and Empower New Jersey -- Kristina Persaud; Karla Sosa; Doug O'Malley; and Matt Smith.

Please come on up.

And, if you could just state your name on record.

And, please, we've had a lot of environmental groups here saying the same message; don't be repetitive.

D A V I D P R I N G L E: Thank you, Mr. Chairman.

David Pringle, representing Empower New Jersey. I think you all know who we are.

We have submitted to all of you in the Legislature on Friday, I believe, a letter from over 100 groups calling for a strengthening of the clean-energy standard bill. And, so, I want to just very quickly summarize that testimony.

And, we are also in support of the grid-mod bill. We'll leave the details to all of you.

And, to Assemblyman Barranco's point, we don't think it is a chicken and egg. They both have to happen, and they have to happen simultaneously. We need the grid-mod bill, but we need the clean-energy standard bill, too -- done the right way.

There are several amendments that we're seeking from the draft that was circulated in November. You heard from the environmental justice folks what they are; we very much support them. You need the "ands" instead of the "ors;" we need to define *de minimis*, and we can't have (indiscernible). I just want to quickly elaborate as to why that is.

Carbon neutral is not emissions neutral. And, even carbon neutral, there's a lot of accounting gimmicks that go. Best-case scenario, carbon neutral doesn't get the drastic reductions we need. Worst-case scenario, it doesn't get any reductions, and in some cases, it can increase pollution because of leakage and the like.

We also fully support that the position-- The garbage incinerators that violate their air permits should not be getting renewable energy credits. And, basically, this all boils down to: You can't burn hydrogen and you can't burn methane. How ever it's produced -- from a landfill; from the sewer plant; naturally from (indiscernible); from methane; from ammonia; wherever you get it -- it can't be converted to clean. Same with hydrogen. So, we really need to be doing alternatives.

So, I also wanted to talk about the percentages that were being thrown around. The 35% by next year -- that's a different definition than what's in this bill. That is only-- Under that definition, it's only RECs, and we're not on track to get to 35% under that because of offshore wind being stalled. However, we *are* on track for 100% by 2035 if we do it right. Under

the definition of this bill, nuclear is clean; that's 35% to 40% of our power right now. In-state solar is roughly 5%; out-of-state clean energy RECs are coming into the state -- that's 10% to 20%. So, by that math, today, we're already at 50% to 60%. Offshore wind isn't going as fast as we'd like, but it's getting there, and it will be ready to go by 2035. And, we do support amendments to make sure that as much of that -- those jobs happen in-state and that we want in-state power for all those reasons.

So, let me just close by saying that to tweak a well-known phrase, "If you don't build it, they won't come." If you don't have a goal, you're never going to achieve. If Kennedy didn't have that goal, we wouldn't have gotten to the moon. So, can we get there by 2035? I think we can. If it has to slip to 2036, 2037, so be it, but the definition is absolutely critical, because once you've built that stuff, it isn't going to go away. If we keep laying more and more gas pipelines, they're not going to want-- They're not going to shut down in five or 10 years; that's going to be massive stranded debt. So, let's invest in the stuff that we really need to, and to get that done.

We do not want the perfect to be the enemy of the good. We have made a lot of progress, but the bill is not there yet. And, if we don't get it right, we will fail, and, so, we look forward to working with you.

And, I appreciate -- I know at least Chairman Smith and I know the administration has said that they support the amendments that we're looking for.

ASSEMBLYMAN DeANGELO: Thank you for your testimony, and thank you for being very precise. I appreciate it.

Kristina.

K R I S T I N A P E R S A U D: Good afternoon, Chairman Smith and DeAngelo, and Committee members; thank you for having me today.

My name is Kristina Persaud. I am the Senior Policy Principal in New Jersey State League for Advanced Energy United, a national business association representing more than 100 energy companies, including everything from wind; solar; EV; transmission developers. Together, the Advanced Energy sector employed roughly 140,000 workers in the Garden State in 2022.

First, I would like to express strong support for S237, the clean-energy standard, because it provides clear market signal and incentives for investment in renewable-energy infrastructure in the state.

And, now I am going to turn to the grid-mod bill. Grid modernization can foster innovation and embrace customer participation in the energy transition. However, as drafted, United would urge legislators to consider several key amendments. The amendments have been attached to my written testimony, and you should have those.

First, we recommend focusing the bill on the modernization of the distribution system only. By excluding transmission, we avoid jurisdictional ambiguity, given the BPU clear oversight over the scope of the bill.

Second, the bill's provisions must be clarified to ensure utility investments align with the creation of a modern flexible grid. To build the grid of tomorrow, investments must change the architecture of the grid, as opposed to reinforcing already outdated practices.

Third, while we support the establishment of a ratepayer relief fund, we are concerned for the potential for that fund to increase utility

profits at taxpayer expense. We recommend prohibiting the use of relief funds to increase a utility's base rate, ensuring 100% of those funds directly benefit the customer.

And, lastly, ensuring that plans are prudent and cost-effective is critical, and requires sufficient BPU oversight and stakeholder input. As drafted, 120-day timeframe or automatic approval without the BPU is insufficient for necessary scrutiny. We propose extending the timeframe to 240 days and completely eliminating any automatic approvals to ensure that there is adequate oversight and scrutiny.

Thank you for considering my testimony, and I am happy to take any questions.

ASSEMBLYMAN DeANGELO: Thank you, Kristina.

Karla.

K A R L A S O S A: Thank you; good afternoon.

I am Karla Sosa; I am Environmental Defense Fund's New Jersey policy manager, and I am testifying on behalf of both EDF and the Natural Resources Defense Council.

Thank you for this hearing and for the opportunity to testify. I am going to do my best to cut corners and keep it short.

So, I am focusing only on the grid-mod bill. I don't need to underscore the importance of the electric grid in our lives. We rely on it currently; we will continue to do so, and especially in an electrified future. I just want to underscore an electrified future is to the benefit of New Jerseyans. Electrifying vehicles and buildings and doing so correctly can lower energy expenditures and rates, and can improve the current utilization of the grid -- to say nothing of reduced air pollution.

And, much of this can be done with the existing grid capacity, but some strategic and proactive investments are needed to ensure the grid can support electrification while being flexible enough to interconnect distributed energy resources such as solar.

We need to start *today* to build the grid that we will need tomorrow. Grid build-out takes time, and the infrastructure typically lasts several decades, so we need to commit to a path now that will build the grid needed for healthy and economically vibrant New Jersey with reliability and affordability, of course, always front of mind. The longer we delay, the harder and costlier it will be to course correct down the line.

EDF and NRDC believe this bill, with some modifications, can lead us down a path of responsible investments. Our amendments are supported by a diverse group of stakeholders including Environment New Jersey, Charge EVC, Tesla, and others. They've been submitted along with my testimony for your review.

I'll go over what the red lines do very quickly. They require utilities to update their infrastructure planning processes to align with the State's electrification goals, and they then direct utilities to update infrastructure deployment and operation procedures to meet these electrification-related needs. They promote the use of technologies such as flexible interconnections, customer-side distributed energy resources, and non-wired solutions to expedite interconnections and right-size investments, keeping build-out affordable. They establish timelines for prompter interconnection and energization of new loads and distributed energy resources. They require utilities to cover reasonable costs of utility-side infrastructure for EV charging, as well as authorizing them to recover certain

costs related to projects. While directing, they design EV charging rates to promote affordable, equitable, and efficient charging. And, finally, they require a workforce-development pipeline and establish utility reporting and BPU and stakeholder monitoring.

In short, New Jersey's shift to electrification requires we change our approach -- which is currently reactive -- to one that identifies and prepares for oncoming electric demands. While some of these issues are currently being supported by the BPU, we believe our amendments would compliment those efforts.

I want to thank you again for allowing me to testify today, and I look forward to working together, and I'm happy to answer any questions.

ASSEMBLYMAN DeANGELO: Thank you, Karla.

Doug.

D O U G O ' M A L L E Y: Thank you so much, Mr. Chairman.

Doug O'Malley, Director of Environment New Jersey.

And, a wise man once said that brevity was the soul of wit, so I will work to be short.

In terms of the grid-mod bill that Karla just testified on, I think what you've heard universally is that everybody and their mother is in support of grid modernization. The problem is, who is going to spend money to make that happen?

And, that's why I wanted to thank Senator Smith for this bill, for having $30 million. Because, in the Governor's budget prepared for '25, there's $40 million. There's a zero missing after that 40, though. We need to be making investments through the budget process and through the BPU to make grid modernization happen.

I am also testifying here this morning as the Steering Committee of Empower New Jersey. There's more than 60 activists who turned out, with a simple message: New Jersey needs "squeaky clean" energy. And, while that may seem tongue in cheek, that's exactly the message that you just heard delivered from environmental justice leaders and specifically this line from the November 20 hearing by Maria Lopez-Nuñez from the Ironbound Community Corporation.

The Ironbound and other communities across the state have suffered the ravages of environmental injustice, and you heard direct testimony on the importance of ensuring that a clean-energy definition is truly that -- truly "squeaky clean."

I also just wanted to take a few moments to reference and support the testimony of MSSIA on ensuring -- and, also, on many others -- ensuring that solar happens in New Jersey and that we are looking to produce in-state solar, not just because of the environmental benefits, but because of the value for the grid. We feel that the value of solar is being vastly under-valued, and this is backed up in the MSSIA testimony which is in front of you. The average value of solar is bundled energy and attributes -- there's $264 per megawatt hour in New Jersey. That is a tremendous value, so we need to be looking at the full value of solar for in state.

I will also say, looking for out-of-state clean energy, we need to be sure that we're not double counting. It's called additionality; we shouldn't be double counting energy that is in Ohio or Illinois. So, we need to make sure that we're balancing the needs to have -- to maintain our current balance of out-of-state clean energy, but to ensure we continue to build more in-state clean energy, including solar and offshore wind.

Thank you.

ASSEMBLYMAN DeANGELO: Thank you, guys.

Any questions from the Committee? (no response)

Seeing none, the panel is dismissed; thank you.

Chairman.

SENATOR SMITH: So, we're going to bring up a couple of groups because they're relatively small.

Panel 8 was New Jersey Chamber of Commerce -- Mike Eggerton *(sic)*. Is Mike here?

UNIDENTIFIED SPEAKER: I don't see him.

ASSEMBLYMAN DeANGELO: No.

SENATOR SMITH: And, I'm sure we received testimony from him.

Our last two panels are two people each. Renewable developers -- Lyle Rawlings, MSSIA; and Paulina O'Connor, formerly Banasiak, for NJ Offshore Wind Alliance. And, then, the MS -- municipal solid waste incinerators -- Alyssa Wilds, Director of Community Affairs for Covanta; and Lloyd Naideck, Director of Government Relations for Covanta.

So, why don't we put Lyle over on the left side; we'll do Lyle and Paulina first, and then last will be Alyssa and Lloyd.

UNIDENTIFIED SPEAKER: Yes.

SENATOR SMITH: Yes.

How about Alyssa and Lloyd, are they here?

OK, come on up.

And, let's not waste a moment. Lyle, if you would introduce your topic and your name--

L Y L E K. R A W L I N G S: Yes--

SENATOR SMITH: --and your representation.

MR. RAWLINGS: Thank you, Chairman Smith, and Chairman DeAngelo; thanks for inviting me here to speak.

My name is Lyle Rawlings. I am the President and Founder of the Mid-Atlantic Solar and Storage Industries Association.

And, Chairman DeAngelo, I do have new information to share; no repetition, I don't think.

You should have a slide deck, a presentation, it looks like this. And, in view of the testimony I've heard, I'm going to switch it up in order a little bit and go right to slide number eight of 10, and talk about the RPS and the RPS bill.

So, we've testified before about MSSIA's modeling of what 2035 looks like under current policies and under an RPS bill. I know this is an older version of the same bill with similar outcomes. And, for the past week, we've been burning the midnight oil to add additional detail and bring the modeling up to date. And, the results are pretty surprising and, in a way, very encouraging.

So, we've modeled the load growth. We did a detailed model of achieving the Governor's executive order for EVs, 100% of sales by 2035. We've modeled in detail the load growth due to electrification, but also took into account the energy master plan's recommendations for energy efficiency -- as you said, Chairman DeAngelo, it's the cheapest best kilowatt hours, the one you don't use -- and took the EMP recommendations for reduction of load due to energy efficiency, and put all that in the model to see how much load will grow net between now and 2035.

And, then, we took a look at current policy for renewables. And, this includes the executive order for offshore wind through 2040; the executive order for -- well, not an executive order, the least-cost scenario that was reported and recommended in the energy master plan for solar. Now, that doesn't have an executive order with a specific requirement, but it is established in law, but only for the next two years. So, solar is only supported for the next two years; it makes us very nervous.

But, assuming the energy master plan least-cost scenario is continued, that we don't abandon solar two years from now, and we keep growing solar through 2035 and meet those EMP goals -- which, by the way, are just interim goals for both offshore wind and for solar. But, those interim goals by 2035 result in a situation where nuclear, wind, and solar -- and a small amount of biomass -- provide 98% of the required energy. And, 98% of the renewable energy is in-state energy. We only need a very small amount of energy from out of state -- Class I energy from out of state -- 2% out of state will get us to 100% in 2035. And, that's great; that means we can get to these goals of 100% with in-state renewables and create jobs and economic growth.

And, what this implies is that we don't need much in the way of out-of-state Class I, and we certainly don't need a clean-energy standard. We have got four different renewable incentives now -- we have ORECs, we have Class I RECs, we have SRECs, and we have nuclear ZECs. Now, the nuclear ZECs have been taken out because Uncle Sam is doing that for us now. But, we don't need a fifth energy standard, especially one that is opening the door to questionable technologies that are non-renewable and that may not provide additionality.

So, we are in good shape, but these are executive orders and, in the case of solar, only in place for the next two years. This bill is important; 100% by 2035 is important. We should do it. And, we need to take these executive orders and goals, make sure they're extended to 2035, and have them in legislation, not just executive orders.

So, the bill -- the RPS bill that we had in November -- and this bill, which I believe is from August from 2022, unfortunately don't achieve that bright future. When you do the math on S237 that's on the web now, what you find is, in that scenario where it's 50% in-state renewables, it means there's zero support for solar starting today. In other words, we can meet those standards and stop building solar right now. And, in fact, we'd have to do that and cut back on the wind goals of 7.5 gigawatts by 2035, and roll that back to 4.5 gigawatts instead and meet that 50% in-state renewables. So, we believe the bill has to be amended to protect these sources that can provide everything we need to get to 100% by 2035.

One of the topics I was asked to speak about was the value of solar. And, this speaks to, "Is it cost effective to do this; to get to this 100% with 100% in-state sources?" The studies that have been done -- and there are several that address the value of solar -- show that it is worth much more than the cost of incentives that it takes to build it here in the state. And, that goes back to slide number two. Actually, I am going to touch briefly on slide number one.

And, what slide number one speaks to is that the tech-neutral approach is the wrong approach. And, this is what is being done in jurisdictions all over the world. On that slide, it shows the work of the International Energy Agency's "Task 14," which is, "How do you turn

intermittent renewables into firm power?" And, this is being done all over the world right now by Drs. Richard Perez and Marc Perez of Clean Power Research.

What is shown here is an optimization curve, and that's what they do. They go to-- Right now, they've done 17 states, most of them in the mid continent, so 15 states there including the famous Minnesota Solar Pathway study that was done by them. They're doing this in China now; Canada; Switzerland; Australia; several Caribbean islands. And, what they do is they take the optimum recipe of how much of different resources in what amounts get you to the lowest overall cost. So, this is a technological optimization study. It's not tech blind; it's not tech neutral; it's technology specific. It gets you to the most optimum point.

And, one of the consequences of that is it also optimizes the grid-modernization efforts and gets you the least possible cost to do the grid modernization. So, it's like baking a cake. You need the right amount of the right ingredients, and that's something we need to do in New Jersey. We need to do one of these tech-optimization studies; find out what it's going to cost; and what the right recipe is.

Now, if we do that, we optimize the value, and the next slide -- slide two -- is the first study, which was our own energy master plan. It considered several different scenarios, and it came up with what it called the "least-cost scenario." And that least-cost scenario, as shown in this slide, is heavy on in-state solar. It has only 2% out-of-state solar, but 34% in-state solar. And, in slide three, it shows how much solar it recommends, and it recommends by 2035 that we have 17.2 gigawatts of solar. And, we've already built or approved about 5.5 gigawatts, so that's about 11.5 gigawatts

more that we need to build between now and 2035 to adhere to the energy master plan recommendations for the least cost.

In slide four, the energy master plan also said in Section 2.1.6, "Develop mechanisms to compensate distributed energy resources for their full value stack." And, a full value stack means you stack up a bunch of services that solar will create and see what the total value is. And, as Doug said, the conclusion of the study of clean-power research here in 2012 was that, in New Jersey, the value of the energy and the attributes together is $264 per megawatt hour. That's well above the incentives that we're paying solar. We also asked them to look at what is the value of *just* the attributes without the energy value, and that was $170. We're now paying incentives of about 100. So, consumers are getting a bargain.

I am going to skip over the next two slides for the sake of time, but these explain more of one of those values, which is the way the solar drives down the cost of wholesale power during the peak power periods, or the peak pricing periods, of the summer afternoon. And, there is a lot in here about how these -- how that works. Among the many other values, some of which Doug mentioned, like the jobs; the economic growth; the billions in Federal dollars that are flowing into this state.

So, I am going to skip those and go to values that are delivered by solar that are either new, and therefore not studied before or simply weren't studied before. I'll go through these quickly.

One is that when renewable energy displaces fossil fuels such as natural gas during the peak solar time, you're changing the demand -- the demand supply balance -- and driving down the cost of the fossil fuels. So, as we get more and more renewables on the grid and more in other states as

well, regionally, you'll drive down the cost of natural gas. And, so, that's a value that hasn't been studied, and that can easily be quantified but has not been.

Another is resiliency. When we do distributed solar in the state, and we're doing batteries at the same time, we compare the two together to keep critical facilities operating. And, this could be thousands of homes; it could be gas stations and hotels, local attributes like that. It can be hospitals; it can be giant sewage plants and water plants. And, keeping these critical community functions going has a value that our Office of Emergency Management knows how to quantify.

Now, the biggest one is there's a difference between in-state distributed solar and every other source of clean energy. And, that is that every clean-energy project generates a profit; it generates net revenue. So, the question is, who gets that revenue? When you build solar in the state, that revenue -- part of it or all of it -- goes to homeowners; it goes to schools, local municipalities, businesses. People and institutions in this state get that profit. So, that's a cash benefit that goes back -- never been studied before.

Now, we studied, in the case of 40 schools, that for every dollar of incentive that was spent on those school projects -- for these school projects -- the school saved $1.50. So, they paid for the whole cost of incentives, plus just from that alone. And, now it's going to get even better -- due to the IRA, those schools which used to rely on third-party owners -- so they split the profit with third-party investors, so the schools only got a third to a half of that profit. Now they can get all of it because the IRA established direct pay of the ITC. So, government nonprofits can get that money directly. So, that

will double or triple the cash value that those institutions get, which is then spread broadly with the public.

And, I think I will end it there. There's more on grid modernization, but, for the sake of time, I'll provide electronic copies of both my testimonies, the backup studies, and our modeling.

P A U L I N A B A N A S I A K O ' C O N N O R: Good morning. I hope you all had a hearty breakfast.

I am Paulina O'Connor, and I serve as the Inaugural Executive Director of the New Jersey Offshore Wind Alliance, or NJOWA.

We're a newly created advocacy project organized through our parent organization, MAREC Action. The Alliance is comprised and funded by offshore wind developers and regional energy advocacy groups. Our mission is to be the unified and trusted voice of the offshore-wind industry. We are dedicated to the clean-energy transition; maximizing economic development; and working closely with environmental, energy, and labor stakeholders to advocate for policies that deliver a more clean and reliable energy through offshore wind.

Thank you for inviting NJOWA to testify today on the bill. We generally support the legislation and stand with its sponsors and countless advocacy groups in support of renewable and reliable energy. However, we recognize that we need to make sure such policies do not have unintended adverse consequences, and we're encouraged by this thorough and transparent legislative process and hope that the labor and environment stakeholders, as well as the sponsors, come to a mutually beneficial agreement for all.

I want to underscore the importance of offshore wind as a key component in our state's clean-energy future. It presents a tremendous opportunity for the state to diversify its energy portfolio; reduce greenhouse-gas emissions; and create high-quality jobs in a rapidly growing industry. Offshore wind companies stand with labor groups to ensure the creation of thousands of well-paying jobs in construction, manufacturing, operation, and maintenance. These jobs will not only support our local economies, but also provide opportunities for workers in communities that have been historically underserved or marginalized. With our state's extensive coastline and strong wind resources, we are uniquely positioned to become a leader in offshore wind development on the east coast. And, by harnessing the power of offshore wind, New Jersey can make substantial progress towards its clean-energy goals; improve air quality; and protect our natural resources for future generations to come.

And, lastly, I would like to stress the importance of codifying the Governor's Executive Order Number 308, which would formalize the 11,000-megawatt goal by 2040 into state statute. We welcome the opportunity to meet with members of both sides of the aisle to discuss further the benefits of offshore wind and the need for the codification of the EO.

We are always available as a resource, and we thank you again for the invitation to testify.

Thank you.

SENATOR SMITH: Any questions for the panel? (no response) (indiscernible) and Lloyd.

Tell us what you would like to tell us.

L L O Y D N A I D E C K: Thank you, Chairman.

Lloyd Naideck; I am the Director of Government Relations for Covanta.

Covanta operates or owns three facilities in New Jersey: one in Essex; one in Union and Rahway; and then one in Camden. There is also a fourth facility not owned or operated by us, by a competitor known as WIN, that operates in Gloucester County. Gloucester County owns that facility, as does Union County. We are the operator in some sort -- in some ways -- and other times we actually own the facilities and manage them that way.

Covanta itself is a leader in the sustainable-material management industry. On top of just our waste-energy facilities, which you've heard today as incinerators, which we respectfully disagree with that term being the only exclusive term used for that. There is an air-emission control system. This is not what we think of as in New York City in the 1950s where you put garbage down a chute and it goes to an open flame and it's just released out into the air. There is an immense amount of air-emission control. In fact, two-thirds of the facilities are air-emission control.

We are also a New Jersey-based company. We are headquartered in Morristown, and employ over 500 individuals here in the state between the facilities and our corporate headquarters. We are proud to be one of the only corporations -- and the only corporation to testify in favor of New Jersey's environmental justice law -- in 2021, and we strongly support efforts not just to drive down emissions and be transparent with the communities that we operate in, but also then to interact with those communities and give back to them.

We recognize that we are not-- We are a heavily regulated industry and we do have air emissions. We are aware of that. All facilities

in the state with a Title V air-emission permit are going to have some sort of emission, but we recognize it's our responsibility to, again, drive those emissions down and be integrated in the community as much as humanly possible. And, Alyssa is going to speak to that role really quickly in a few minutes.

There is a reason waste-energy facilities not just exist but are included in the RPS in New Jersey and in many other states. In fact, 31 states consider waste energy to be a renewable energy source. The Federal government does so, and Europe does so, in many ways. Again, the reason for that is because of the GHG emission reduction. There is no carbon-free way to deal with waste -- in America, in Europe, or anywhere else in the world. In fact, of all the G7 nations, waste-to-energy is the preferred method of waste disposal. The reason for that is the methane emission avoidance, recycling, and a carbon-neutral technology that we are.

There is-- Again, there is nothing else that is going to come close. Composting is going to have an emission; recycling has emission; anaerobic digestion -- everything has an emission. When you're talking about waste, it is one area that decarbonization is not as clear as, say, the electric industry. We look to New York State, for example, where they just had the CLCPA -- the Climate Leadership Citizens Protection Act. That law went into effect a couple years ago; they had a large climate-scoping climate council. They found 12% of all GHG emissions in the state came from the waste center. That was tied for third largest after vehicles and buildings. So, it was tied with the electric-generation sector. Of that, 85% of those emissions came from landfills. We-- In New Jersey, we are about 25% of the municipal solid waste is handled through facilities like ours; same in New York City. Again,

you can just now kind of do the math on the back of the envelope in your head. The emissions from the waste sector in New Jersey are coming dramatically from landfills; they're coming from other facilities as well. It is not exclusively a waste-to-energy problem or part of the ecosystem.

We also-- So, on top of being considered a renewable energy in all these other states; on top of being seen in the Biden Administration's Inflation Reduction Act as a method of waste disposal so valued that the IRA granted up to 40% tax breaks to cities, municipalities, and counties that go ahead and build new facilities. And, we are seeing new facilities that are being cited and built today throughout other parts of the country.

Getting specifically to your legislation, Senator Smith, which we *do* support the goal of, and, we admire the work that you're doing because it is not easy. And, you are bringing together a very large and divergent group of stakeholders to solve the largest issue that this state and this country and this world know, which is, how do we actually generate clean electricity?

We strongly believe that if we're going to put lines around the current RPS and the current RECs that are given -- whether they are Class I, Class II, SRECs, ZRECs -- whatever they might be -- every facility that's within an environmental justice zone -- of which there are *many*, that are not just waste-to-energy facilities -- should also have the same stringent applications of permits being complied to and adhered to.

Our facilities-- We heard testimony earlier that said we've had 1,000-plus air violations since 2004 from the different facilities. Just to be clear: One facility alone in New Jersey has 600,000 overlapping compliance periods a year. We are 99.96% compliant, on average, with all of our facilities. To say 1,000 -- 1,000 air emission, 1,000 permit violations,

whatever they might be, because it's not clear that they're always air emission. They could be storm water; there could be a paperwork permit issue -- 1,000 out of 600,000 per facility per year. Again, putting that into the context of where it actually is does give a little perspective on what we're doing here.

We also want to make sure that if we are going to be having a penalty for having any sort of permit violation, that is not a one-year violation. We strongly believe that if there is a violation, we want to give back to the community; we want to give back that REC for that time. We would be willing to put that money into a fund to benefit the community, but we do not believe it should be a one-year, one permit violation and you're out. No facility in New Jersey -- whether they're doing what we do or doing anything else -- is going to be 100% compliant 100% of the time.

So, with that, just very quickly, we want to come up here and make clear we recognize the target that's on our back. We recognize we're a regulated industry that has real emissions. We work to drive them down; we work to be a partner with the communities that we exist in, and we work to diverge and divert fossil fuels from being a part of the grid -- which, in all honesty, seems that, from the conversation here, is going to continue for the next several years -- next 10 years at a minimum. With this legislation passing, hopefully at 2035 we get to that conversation, but we want to continue to ensure that fossil fuels are not a part of that grid, and that's why we're part of the RPS.

And, with that, I'll turn to Alyssa, who handles our community relations side of the (indiscernible).

A L Y S S A W I L D S: Thank you for giving me the responsibility of standing in between you and a (indiscernible).

So, I will go as quickly as humanly possible.

My name is Alyssa Wilds, and I am the Director of Corporate and Community Relations at Covanta. My responsibility is to oversee our community outreach efforts across the country; address long-standing environmental-justice concerns; and ensure residents remain informed and heard.

And, while I joined team Covanta in September 2021 as the Community Outreach Manager for four sites, including Camden, Union, and Essex, New Jersey, the work had already begun a decade prior. Our environmental-justice policy was created in Chester, PA, alongside residents, stakeholders, and activists in 2011. The goal of the policy was to recognize our need to engage all community stakeholders; address concerns; open regular lines of communication; and become a good neighbor -- a valued community partner.

The policy came with a community outreach playbook that suggested ways to engage residents in grassroots organizations; however, it was quickly realized that there was no one-stop approach to doing the work. Each city came with its own history, intricacies, and goals to be achieved. And, treating them as though they were the same could be more harmful than having never having engaged them at all.

Over the past two years, the Community Relations team has grown. With two specialists dedicated to New Jersey, we have been able to expand our efforts with the specific needs of the community in mind. We listened. We had hard conversations. We allowed the residents to design the community outreach plan for their city. We met with stakeholders. We regrouped and revised our plans as often as necessary.

In 2023, after a full revision of our community outreach playbook and setting key performance indicators, we logged 1,400-plus volunteer hours in the State of New Jersey. Four thousand families, seniors, and displaced individuals were fed. Vacant lots were turned into pollinator gardens. Elementary students were taught to recycle. Middle schoolers worked alongside our facility staff to create small urban farms. High schoolers were offered internships to explore career paths that didn't require a college degree. Second-chance hiring was introduced; local hiring was increased. Weekly community cleanups were completed with city leaders and other corporate partners. Neighborhood service projects were accomplished to assist in raising the city's Sustainable Jersey certification. Collaborations with workforce-development organizations were established to create stronger employee pipelines.

Covanta-led monthly gatherings were held to keep lines of communication open and transparency at the forefront. Town Hall meetings were hosted throughout our whole cities, as requested. School and sports sponsorships were offered to grant students the same experiences as their suburban counterparts. Facility tours rose drastically. College and high school students from around the state; elected officials; mentoring organizations; seniors; inquisitive residents; and activists were all hosted. Several nonprofits were able to expand their programming due to funds received from our community benefits agreement. The list goes on, and the work continues.

Covanta recognizes the importance of the work being done and the need to do more. Not only has the community relations team expanded to ensure the work does not end and there are no gaps in service, but our

outreach efforts are now a company-wide priority. We have also begun working jointly with other industries in our host cities to provide greater services to the residents.

I am a product of a Covanta community, and I am devoted to this work. Over-burdened and under-served cities like my hometown of Camden, New Jersey, are used to being disregarded. We have been promised much and given extraordinarily little. We were used to decisions being made without our knowledge or input. Covanta has changed that narrative. We initiate the conversations, and we keep all partners informed. We guarantee promises are upheld and delivered on time. We speak the languages of the communities. We offer information at multiple levels of understanding. We are always available to answer questions and listen to concerns. We are open, accessible, and consistently doing our very best to be a good neighbor and a valued community partner.

Thank you very much for this opportunity to speak.

ASSEMBLYMAN DeANGELO: Thank you very much.

SENATOR SMITH: Alyssa, thank you for your comments.

And, Lloyd, thank you for yours as well.

Thank everybody (indiscernible)

I think we got a thorough, exhaustive set of comments on both of these bills.

Chairman DeAngelo, let me thank you for participating with your Committee today. It was a lot of fun; let's do it again soon.

ASSEMBLYMAN DeANGELO: Thank you, everyone.

SENATOR SMITH: All right, be well.

(MEETING CONCLUDED)