Committee Meeting

of

SENATE ENVIRONMENT AND ENERGY COMMITTEE

"The Committee will meet to hear testimony from invited guests on how food waste management and organics recycling can be used to mitigate greenhouse gas emissions in the State"

"The Committee will also take testimony, for discussion only, on S-431, S-439, and S-2185"

LOCATION: Committee Room 10
State House Annex
Trenton, New Jersey

DATE: May 16, 2022
10:00 a.m.

MEMBERS OF COMMITTEE PRESENT:

Senator Bob Smith, Chair
Senator Linda R. Greenstein, Vice-Chair
Senator Richard J. Codey
Senator Edward R. Durr Jr.
Senator Jean Stanfield

ALSO PRESENT:

Eric Hansen
Office of Legislative Services
Committee Aide

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

Rebecca Panitch
Senate Republican Office
Committee Aide

Meeting Recorded and Transcribed by
The Office of Legislative Services, Public Information Office,
Hearing Unit, State House Annex, PO 068, Trenton, New Jersey

SENATE, No. 431

STATE OF NEW JERSEY

220th LEGISLATURE

PRE-FILED FOR INTRODUCTION IN THE 2022 SESSION

Sponsored by:
Senator BOB SMITH
District 17 (Middlesex and Somerset)
Senator LINDA R. GREENSTEIN
District 14 (Mercer and Middlesex)

SYNOPSIS

Directs BPU to update interconnection standards for Class I renewable energy sources and develop fixed fee structure for interconnection costs.

CURRENT VERSION OF TEXT

Introduced Pending Technical Review by Legislative Counsel.

AN ACT concerning Class I renewable energy and supplementing Title 48 of the Revised Statutes.

BE IT ENACTED *by the Senate and General Assembly of the State of New Jersey:*

1. a. No later than 18 months after the effective date of this act, the Board of Public Utilities shall adopt, pursuant to the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.), rules and regulations that establish safety and power quality interconnection standards for Class I renewable energy source systems in the State. The interconnection standards shall conform to the model standards promulgated by the Interstate Renewable Energy Council in its "Model Interconnection Procedures (2019)," including the pre-application process described in the model standards, unless the board determines that there are compelling reasons that a provision in the model standards would be impracticable in New Jersey, in which case that provision may be modified to the extent deemed necessary by the board. The interconnection standards shall also conform to the provisions of subsections b. through d. of this section, provided that, if any of those provisions are inconsistent with the model standards promulgated by the Interstate Renewable Energy Council, the board shall adopt standards pursuant to the provisions of subsections b. through d. of this section.

b. (1) The board shall establish a set of fixed, one-time interconnection fees, to be known as "grid modernization fees," that shall be paid by the owner of a Class I renewable energy project to an electric public utility to defray the costs of the project's interconnection to the grid, including, but not limited to, costs related to administrative tasks, studies, infrastructure upgrades, and grid upgrades carried out by the electric public utility. The grid modernization fees shall be assessed per kilowatt of energy to be produced by the Class I renewable energy source and may be divided into tiers based on the total amount of energy to be produced by the energy source, the type of energy source, or any other category deemed appropriate by the board.

(2) For the first three years during which the grid modernization fees are in effect, the fee for a residential, net-metered Class I renewable energy source less than or equal to 10 kilowatts in size shall be no more than $50 per kilowatt.

(3) The board may adjust the fees every three years, and this adjustment process shall be exempt from the requirements of the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.), provided that each adjusted set of fees is published in the New Jersey Register prior to going into effect.

c. (1) Any interconnection costs paid by an electric public utility in excess of the amount recovered through the Grid Modernization

Fee may be recovered by the electric public utility from its ratepayers either in base rates or as a current expense recovery through a customer surcharge or tariff rider, subject to the approval of the board.

(2) The cost of any infrastructure upgrade that is necessary to render a segment of the electric grid capable of interconnection to an additional distributed Class I renewable energy source shall also be recoverable by an electric public utility pursuant to this section, provided that the utility demonstrates that the upgrade is necessary and in the public interest at a rate case proceeding.

(3) The board is authorized to approve a rate increase, customer surcharge, or tariff rider for the purposes enumerated in this subsection.

d. The board shall establish maximum interconnection costs, for each category of grid modernization fee, in per-kilowatts amounts determined to be in the public interest by the board, such that a Class I renewable energy project with estimated interconnection costs in excess of this maximum amount shall be eligible for cost recovery pursuant to subsection c. of this section only up to the applicable maximum interconnection cost. The board may update or adjust a maximum interconnection cost every three years, and this process shall be exempt from the requirements of the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.), provided that each updated maximum interconnection cost is published in the New Jersey Register prior to going into effect.

e. No later than 12 months after the adoption of rules and regulations pursuant to subsection a. of this section, the board shall submit a report to the Governor and, pursuant to section 2 of P.L.1991, c.164 (C.52:14-19.1), to the Legislature on the implementation of the interconnection standards and grid modernization fees pursuant to this section. The report shall include an analysis of the economic impact of the standards and fees, and their effect on the State's progress towards meeting the goals established by the "Global Warming Response Act," P.L.2007, c.112 (C.26:2C-37 et seq.), and may include recommendations for future legislative or regulatory action.

f. As used in this section:

"Board" means the New Jersey Board of Public Utilities or any successor agency.

"Class I renewable energy" means the same as that term is defined in section 3 of P.L.1999, c.23 (C.48:3-51).

"Electric public utility" shall have the same meaning as provided in section 3 of P.L.1999, c.23 (C.48:3-51).

2. This act shall take effect immediately.

STATEMENT

This bill would direct the Board of Public Utilities (BPU) to update the safety and power quality interconnection standards for certain renewable energy systems in the State, and to establish a fixed fee structure for the costs of interconnection of those projects to the electric grid.

Specifically, the bill would direct the BPU to adopt rules and regulations, no later than 18 months after the bill's enactment, which establish interconnection standards for Class I renewable energy source systems. "Class I renewable energy" is defined in the law as "electric energy produced from solar technologies, photovoltaic technologies, wind energy, fuel cells, geothermal technologies, wave or tidal action, small scale hydropower facilities with a capacity of three megawatts or less and put into service after the effective date of P.L.2012, c.24, methane gas from landfills, methane gas from a biomass facility provided that the biomass is cultivated and harvested in a sustainable manner, or methane gas from a composting or anaerobic or aerobic digestion facility that converts food waste or other organic waste to energy."

The bill would direct the BPU to adopt standards that conform to the model interconnection procedures promulgated by the Interstate Renewable Energy Council in its "Model Interconnection Procedures (2019)" document, unless there is a compelling reason why a provision in that document is infeasible to adopt in New Jersey.

The bill would also direct the BPU to establish a fixed fee schedule for interconnection fees, which are paid by the owners or developers of renewable energy systems to electric utilities to defray the costs of interconnection, including administrative tasks or studies carried out by the utility, and infrastructure upgrades necessary for the safe operation of the renewable energy system. The bill would designate these fees as "grid modernization fees," and would authorize the BPU to develop tiers for the fees, for example based on the size of the system or the source of the energy (e.g. solar or wind). The bill would authorize the BPU to update the fee structure every three years. The bill would also stipulate that, for the first three years the fees go into effect, the fee for a residential, net-metered system of 10 kilowatts or less would be no more than $50 per kilowatt.

The bill would authorize electric public utilities to recover interconnection costs in excess of the amount recovered through grid modernization fees from the customers of the utility, either through the utility's base rate or through a surcharge. In addition, the bill would authorize electric utilities to recover costs of any infrastructure upgrades that are necessary to render a segment of the electric grid capable of new interconnections by renewable energy

systems, provided that the utility demonstrates that the upgrades are necessary and in the public interest at a rate case proceeding.

The bill would direct the BPU to establish a schedule of maximum interconnection costs, and authorize the BPU to adjust this schedule every three years. Utilities that incur interconnection costs for a renewable energy project above this cost threshold would only be authorized by the bill to recover an amount up to the maximum cost from their customers.

Finally, the bill would direct the BPU to submit a report to the Governor and the Legislature on the implementation of the interconnection standards and grid modernization fees adopted pursuant to the bill. The report would be required to include an analysis of the economic impact of the standards and fees, and their effect on the State's progress towards meeting the goals established by the "Global Warming Response Act," P.L.2007, c.112 (C.26:2C-37 et seq.). The report could also include recommendations for future legislative or regulatory action.

SENATE, No. 439

STATE OF NEW JERSEY

220th LEGISLATURE

PRE-FILED FOR INTRODUCTION IN THE 2022 SESSION

Sponsored by:
Senator BOB SMITH
District 17 (Middlesex and Somerset)

SYNOPSIS

Directs BPU to establish process to maintain supply and demand for solar renewable energy certificates.

CURRENT VERSION OF TEXT

Introduced Pending Technical Review by Legislative Counsel.

AN ACT concerning solar renewable energy certificates, and amending and supplementing P.L.1999, c.23.

BE IT ENACTED *by the Senate and General Assembly of the State of New Jersey:*

1. (New section) a. The board shall adopt, pursuant to the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.), rules and regulations to establish a process to periodically assess and adjust the SREC program to ensure that there is an appropriate and stable ratio between the supply of, and demand for, SRECs in the State. No later than 270 days after the effective date of this section, the board shall file, with the Office of Administrative Law, a notice of a proposed rule to establish the process required by this section.

b. The rules and regulations shall include, but not be limited to:

(1) an assessment schedule such that an initial assessment of the SREC program will be concluded in sufficient time to enable adjustments, if any are determined to be required, in time for EY 2025, and that subsequent assessments will be made no less frequently than will enable the implementation of any adjustments in EY 2030 and EY 2035;

(2) criteria to measure and determine if the current and projected levels of supply and demand for SRECs is sufficient to maintain an appropriate value for SRECs, which is consistent with the historical relationship between the value of the SREC and the value of the solar alternative compliance payment, as determined by the board;

(3) a mechanism by which to adjust the solar renewable portfolio standard as necessary to maintain an appropriate demand for SRECs;

(4) a requirement that, after each assessment of the SREC program, the board prepare and publish a report on the board's Internet website that details the findings of its assessment, the rationale for any adjustments to the solar renewable portfolio standard, or the basis of a determination that no action was required to be taken at that time;

(5) provisions sufficient to ensure that the assessment and adjustment processes established pursuant to this section are: transparent, simple, and effective; minimize the administrative workload of the board; are carried out with adequate forewarning so as to avoid disruption to existing contracts involving SRECs; and minimize additional costs to the ratepayer while protecting investor value and maintaining investor confidence.

c. As used in this section:

EXPLANATION – Matter enclosed in bold-faced brackets [thus] in the above bill is not enacted and is intended to be omitted in the law.

Matter underlined thus is new matter.

"Solar renewable portfolio standard" means the requirement that electric power suppliers and basic generation service providers sell a certain number or percentage of kilowatt-hours of energy produced by solar electric power generators, as established in paragraph (3) of subsection d. of section 38 of P.L.1999, c.23 (C.48:3-87).

"SREC program" means the program to oversee the distribution of solar renewable energy certificates, administered by the board pursuant to section 38 of P.L.1999, c.23 (C.48:3-87).

2. Section 38 of P.L.1999, c.23 (C.48:3-87) is amended to read as follows:

38. a. The board shall require an electric power supplier or basic generation service provider to disclose on a customer's bill or on customer contracts or marketing materials, a uniform, common set of information about the environmental characteristics of the energy purchased by the customer, including, but not limited to:

(1) Its fuel mix, including categories for oil, gas, nuclear, coal, solar, hydroelectric, wind and biomass, or a regional average determined by the board;

(2) Its emissions, in pounds per megawatt hour, of sulfur dioxide, carbon dioxide, oxides of nitrogen, and any other pollutant that the board may determine to pose an environmental or health hazard, or an emissions default to be determined by the board; and

(3) Any discrete emission reduction retired pursuant to rules and regulations adopted pursuant to P.L.1995, c.188.

b. Notwithstanding any provisions of the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.) to the contrary, the board shall initiate a proceeding and shall adopt, in consultation with the Department of Environmental Protection, after notice and opportunity for public comment and public hearing, interim standards to implement this disclosure requirement, including, but not limited to:

(1) A methodology for disclosure of emissions based on output pounds per megawatt hour;

(2) Benchmarks for all suppliers and basic generation service providers to use in disclosing emissions that will enable consumers to perform a meaningful comparison with a supplier's or basic generation service provider's emission levels; and

(3) A uniform emissions disclosure format that is graphic in nature and easily understandable by consumers. The board shall periodically review the disclosure requirements to determine if revisions to the environmental disclosure system as implemented are necessary.

Such standards shall be effective as regulations immediately upon filing with the Office of Administrative Law and shall be effective for a period not to exceed 18 months, and may, thereafter,

be amended, adopted or readopted by the board in accordance with the provisions of the "Administrative Procedure Act."

c. (1) The board may adopt, in consultation with the Department of Environmental Protection, after notice and opportunity for public comment, an emissions portfolio standard applicable to all electric power suppliers and basic generation service providers, upon a finding that:

(a) The standard is necessary as part of a plan to enable the State to meet federal Clean Air Act or State ambient air quality standards; and

(b) Actions at the regional or federal level cannot reasonably be expected to achieve the compliance with the federal standards.

(2) By July 1, 2009, the board shall adopt, pursuant to the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.), a greenhouse gas emissions portfolio standard to mitigate leakage or another regulatory mechanism to mitigate leakage applicable to all electric power suppliers and basic generation service providers that provide electricity to customers within the State. The greenhouse gas emissions portfolio standard or any other regulatory mechanism to mitigate leakage shall:

(a) Allow a transition period, either before or after the effective date of the regulation to mitigate leakage, for a basic generation service provider or electric power supplier to either meet the emissions portfolio standard or other regulatory mechanism to mitigate leakage, or to transfer any customer to a basic generation service provider or electric power supplier that meets the emissions portfolio standard or other regulatory mechanism to mitigate leakage. If the transition period allowed pursuant to this subparagraph occurs after the implementation of an emissions portfolio standard or other regulatory mechanism to mitigate leakage, the transition period shall be no longer than three years; and

(b) Exempt the provision of basic generation service pursuant to a basic generation service purchase and sale agreement effective prior to the date of the regulation.

Unless the Attorney General or the Attorney General's designee determines that a greenhouse gas emissions portfolio standard would unconstitutionally burden interstate commerce or would be preempted by federal law, the adoption by the board of an electric energy efficiency portfolio standard pursuant to subsection g. of this section, a gas energy efficiency portfolio standard pursuant to subsection h. of this section, or any other enhanced energy efficiency policies to mitigate leakage shall not be considered sufficient to fulfill the requirement of this subsection for the adoption of a greenhouse gas emissions portfolio standard or any other regulatory mechanism to mitigate leakage.

d. Notwithstanding any provisions of the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.) to the contrary, the board shall initiate a proceeding and shall adopt, after notice, provision of the opportunity for comment, and public hearing, renewable energy portfolio standards that shall require:

(1) that two and one-half percent of the kilowatt hours sold in this State by each electric power supplier and each basic generation service provider be from Class II renewable energy sources;

(2) beginning on January 1, 2020, that 21 percent of the kilowatt hours sold in this State by each electric power supplier and each basic generation service provider be from Class I renewable energy sources. The board shall increase the required percentage for Class I renewable energy sources so that by January 1, 2025, 35 percent of the kilowatt hours sold in this State by each electric power supplier and each basic generation service provider shall be from Class I renewable energy sources, and by January 1, 2030, 50 percent of the kilowatt hours sold in this State by each electric power supplier and each basic generation service provider shall be from Class I renewable energy sources. Notwithstanding the requirements of this subsection, the board shall ensure that the cost to customers of the Class I renewable energy requirement imposed pursuant to this subsection shall not exceed nine percent of the total paid for electricity by all customers in the State for energy year 2019, energy year 2020, and energy year 2021, respectively, and shall not exceed seven percent of the total paid for electricity by all customers in the State in any energy year thereafter; provided that, if in energy years 2019 through 2021 the cost to customers of the Class I renewable energy requirement is less than nine percent of the total paid for electricity by all customers in the State, the board may increase the cost to customers of the Class I renewable energy requirement in energy years 2022 through 2024 to a rate greater than seven percent, as long as the total costs to customers for energy years 2019 through 2024 does not exceed the sum of nine percent of the total paid for electricity by all customers in the State in energy years 2019 through 2021 and seven percent of the total paid for electricity by all customers in the State in energy years 2022 through 2024. In calculating the cost to customers of the Class I renewable energy requirement imposed pursuant to this subsection, the board shall not include the costs of the offshore wind energy certificate program established pursuant to paragraph (4) of this subsection. In calculating the cost to customers of the Class I renewable energy requirement, the board shall reflect any energy and environmental savings attributable to the Class I program in its calculation, which shall include, but not be limited to, the social cost of carbon dioxide emissions at a value no less than the most recently published three percent discount rate scenario of the United States Government Interagency Working

Group on Social Cost of Greenhouse Gases. The board shall take any steps necessary to prevent the exceedance of the cap on the cost to customers including, but not limited to, adjusting the Class I renewable energy requirement.

An electric power supplier or basic generation service provider may satisfy the requirements of this subsection by participating in a renewable energy trading program approved by the board in consultation with the Department of Environmental Protection;

(3) that the board establish a multi-year schedule, applicable to each electric power supplier or basic generation service provider in this State, beginning with the one-year period commencing on June 1, 2010, and continuing for each subsequent one-year period up to and including, the one-year period commencing on June 1, [2033] 2034, that requires the following number or percentage, as the case may be, of kilowatt-hours sold in this State by each electric power supplier and each basic generation service provider to be from solar electric power generators connected to the distribution system or transmission system in this State:

EY 2011	306 Gigawatthours (Gwhrs)
EY 2012	442 Gwhrs
EY 2013	596 Gwhrs
EY 2014	2.050%
EY 2015	2.450%
EY 2016	2.750%
EY 2017	3.000%
EY 2018	3.200%
EY 2019	4.300%
EY 2020	4.900%
EY 2021	5.100%
EY 2022	5.100%
EY 2023	5.100%
EY 2024	4.900%
EY 2025	4.800%
EY 2026	4.500%
EY 2027	4.350%
EY 2028	3.740%
EY 2029	3.070%
EY 2030	2.210%
EY 2031	1.580%
EY 2032	1.400%
EY 2033	1.100%
EY 2034	1.100%
EY 2035	1.100%

No later than 180 days after the date of enactment of P.L.2018, c.17 (C.48:3-87.8 et al.), the board shall adopt rules and regulations to close the SREC program to new applications upon the attainment of 5.1 percent of the kilowatt-hours sold in the State by each

electric power supplier and each basic generation provider from solar electric power generators connected to the distribution system. The board shall continue to consider any application filed before the date of enactment of P.L.2018, c.17 (C.48:3-87.8 et al.). The board shall provide for an orderly and transparent mechanism that will result in the closing of the existing SREC program on a date certain but no later than June 1, 2021. Commencing after the closure of the SREC program and ending in EY 2035, the board may adjust the solar renewable portfolio requirements of this paragraph to the extent it deems appropriate as the result of an assessment of the SREC program conducted pursuant to section 1 of P.L. , c. (C.) (pending before the Legislature as this bill).

No later than 24 months after the date of enactment of P.L.2018, c.17 (C.48:3-87.8 et al.), the board shall complete a study that evaluates how to modify or replace the SREC program to encourage the continued efficient and orderly development of solar renewable energy generating sources throughout the State. The board shall submit the written report thereon to the Governor and, pursuant to section 2 of P.L.1991, c.164 (C.52:14-19.1), to the Legislature. The board shall consult with public utilities, industry experts, regional grid operators, solar power providers and financiers, and other State agencies to determine whether the board can modify the SREC program such that the program will:

- continually reduce, where feasible, the cost of achieving the solar energy goals set forth in this subsection;
- provide an orderly transition from the SREC program to a new or modified program;
- develop megawatt targets for grid connected and distribution systems, including residential and small commercial rooftop systems, community solar systems, and large scale behind the meter systems, as a share of the overall solar energy requirement, which targets the board may modify periodically based on the cost, feasibility, or social impacts of different types of projects;
- establish and update market-based maximum incentive payment caps periodically for each of the above categories of solar electric power generation facilities;
- encourage and facilitate market-based cost recovery through long-term contracts and energy market sales; and
- where cost recovery is needed for any portion of an efficient solar electric power generation facility when costs are not recoverable through wholesale market sales and direct payments from customers, utilize competitive processes such as competitive procurement and long-term contracts where possible to ensure such recovery, without exceeding the maximum incentive payment cap for that category of facility.

The board shall approve, conditionally approve, or disapprove any application for designation as connected to the distribution

system of a solar electric power generation facility filed with the board after the date of enactment of P.L.2018, c.17 (C.48:3-87.8 et al.), no more than 90 days after receipt by the board of a completed application. For any such application for a project greater than 25 kilowatts, the board shall require the applicant to post a notice escrow with the board in an amount of $40 per kilowatt of DC nameplate capacity of the facility, not to exceed $40,000. The notice escrow amount shall be reimbursed to the applicant in full upon either denial of the application by the board or upon commencement of commercial operation of the solar electric power generation facility. The escrow amount shall be forfeited to the State if the facility is designated as connected to the distribution system pursuant to this subsection but does not commence commercial operation within two years following the date of the designation by the board.

For all applications for designation as connected to the distribution system of a solar electric power generation facility filed with the board after the date of enactment of P.L.2018, c.17 (C.48:3-87.8 et al.), the SREC term shall be 10 years.

(a) The board shall determine an appropriate period of no less than 120 days following the end of an energy year prior to which a provider or supplier must demonstrate compliance for that energy year with the annual renewable portfolio standard;

(b) No more than 24 months following the date of enactment of P.L.2012, c.24, the board shall complete a proceeding to investigate approaches to mitigate solar development volatility and prepare and submit, pursuant to section 2 of P.L.1991, c.164 (C.52:14-19.1), a report to the Legislature, detailing its findings and recommendations. As part of the proceeding, the board shall evaluate other techniques used nationally and internationally;

(c) The solar renewable portfolio standards requirements in this paragraph shall exempt those existing supply contracts which are effective prior to the date of enactment of P.L.2018, c.17 (C.48:3-87.8 et al.) from any increase beyond the number of SRECs mandated by the solar renewable energy portfolio standards requirements that were in effect on the date that the providers executed their existing supply contracts. This limited exemption for providers' existing supply contracts shall not be construed to lower the Statewide solar sourcing requirements set forth in this paragraph. Such incremental requirements that would have otherwise been imposed on exempt providers shall be distributed over the providers not subject to the existing supply contract exemption until such time as existing supply contracts expire and all providers are subject to the new requirement in a manner that is competitively neutral among all providers and suppliers. Notwithstanding any rule or regulation to the contrary, the board shall recognize these new solar purchase obligations as a change

required by operation of law and implement the provisions of this subsection in a manner so as to prevent any subsidies between suppliers and providers and to promote competition in the electricity supply industry.

An electric power supplier or basic generation service provider may satisfy the requirements of this subsection by participating in a renewable energy trading program approved by the board in consultation with the Department of Environmental Protection, or compliance with the requirements of this subsection may be demonstrated to the board by suppliers or providers through the purchase of SRECs.

The renewable energy portfolio standards adopted by the board pursuant to paragraphs (1) and (2) of this subsection shall be effective as regulations immediately upon filing with the Office of Administrative Law and shall be effective for a period not to exceed 18 months, and may, thereafter, be amended, adopted or readopted by the board in accordance with the provisions of the "Administrative Procedure Act."

The renewable energy portfolio standards adopted by the board pursuant to this paragraph shall be effective as regulations immediately upon filing with the Office of Administrative Law and shall be effective for a period not to exceed 30 months after such filing, and shall, thereafter, be amended, adopted or readopted by the board in accordance with the "Administrative Procedure Act"; and

(4) within 180 days after the date of enactment of P.L.2010, c.57 (C.48:3-87.1 et al.), that the board establish an offshore wind renewable energy certificate program to require that a percentage of the kilowatt hours sold in this State by each electric power supplier and each basic generation service provider be from offshore wind energy in order to support at least 3,500 megawatts of generation from qualified offshore wind projects.

The percentage established by the board pursuant to this paragraph shall serve as an offset to the renewable energy portfolio standard established pursuant to paragraph (2) of this subsection and shall reduce the corresponding Class I renewable energy requirement.

The percentage established by the board pursuant to this paragraph shall reflect the projected OREC production of each qualified offshore wind project, approved by the board pursuant to section 3 of P.L.2010, c.57 (C.48:3-87.1), for 20 years from the commercial operation start date of the qualified offshore wind project which production projection and OREC purchase requirement, once approved by the board, shall not be subject to reduction.

An electric power supplier or basic generation service provider shall comply with the OREC program established pursuant to this

paragraph through the purchase of offshore wind renewable energy certificates at a price and for the time period required by the board. In the event there are insufficient offshore wind renewable energy certificates available, the electric power supplier or basic generation service provider shall pay an offshore wind alternative compliance payment established by the board. Any offshore wind alternative compliance payments collected shall be refunded directly to the ratepayers by the electric public utilities.

The rules established by the board pursuant to this paragraph shall be effective as regulations immediately upon filing with the Office of Administrative Law and shall be effective for a period not to exceed 18 months, and may, thereafter, be amended, adopted or readopted by the board in accordance with the provisions of the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.).

e. Notwithstanding any provisions of the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.) to the contrary, the board shall initiate a proceeding and shall adopt, after notice, provision of the opportunity for comment, and public hearing:

(1) net metering standards for electric power suppliers and basic generation service providers. The standards shall require electric power suppliers and basic generation service providers to offer net metering at non-discriminatory rates to industrial, large commercial, residential and small commercial customers, as those customers are classified or defined by the board, that generate electricity, on the customer's side of the meter, using a Class I renewable energy source, for the net amount of electricity supplied by the electric power supplier or basic generation service provider over an annualized period. Systems of any sized capacity, as measured in watts, are eligible for net metering. If the amount of electricity generated by the customer-generator, plus any kilowatt hour credits held over from the previous billing periods, exceeds the electricity supplied by the electric power supplier or basic generation service provider, then the electric power supplier or basic generation service provider, as the case may be, shall credit the customer-generator for the excess kilowatt hours until the end of the annualized period at which point the customer-generator will be compensated for any remaining credits or, if the customer-generator chooses, credit the customer-generator on a real-time basis, at the electric power supplier's or basic generation service provider's avoided cost of wholesale power or the PJM electric power pool's real-time locational marginal pricing rate, adjusted for losses, for the respective zone in the PJM electric power pool. Alternatively, the customer-generator may execute a bilateral agreement with an electric power supplier or basic generation service provider for the sale and purchase of the customer-generator's excess generation.

The customer-generator may be credited on a real-time basis, so long as the customer-generator follows applicable rules prescribed by the PJM electric power pool for its capacity requirements for the net amount of electricity supplied by the electric power supplier or basic generation service provider. The board may authorize an electric power supplier or basic generation service provider to cease offering net metering to customers that are not already net metered whenever the total rated generating capacity owned and operated by net metering customer-generators Statewide equals 5.8 percent of the total annual kilowatt-hours sold in this State by each electric power supplier and each basic generation service provider during the prior one-year period;

(2) safety and power quality interconnection standards for Class I renewable energy source systems used by a customer-generator that shall be eligible for net metering.

Such standards or rules shall take into consideration the goals of the New Jersey Energy Master Plan, applicable industry standards, and the standards of other states and the Institute of Electrical and Electronics Engineers. The board shall allow electric public utilities to recover the costs of any new net meters, upgraded net meters, system reinforcements or upgrades, and interconnection costs through either their regulated rates or from the net metering customer-generator;

(3) credit or other incentive rules for generators using Class I renewable energy generation systems that connect to New Jersey's electric public utilities' distribution system but who do not net meter; and

(4) net metering aggregation standards to require electric public utilities to provide net metering aggregation to single electric public utility customers that operate a solar electric power generation system installed at one of the customer's facilities or on property owned by the customer, provided that any such customer is a State entity, school district, county, county agency, county authority, municipality, municipal agency, or municipal authority. The standards shall provide that, in order to qualify for net metering aggregation, the customer must operate a solar electric power generation system using a net metering billing account, which system is located on property owned by the customer, provided that: (a) the property is not land that has been actively devoted to agricultural or horticultural use and that is valued, assessed, and taxed pursuant to the "Farmland Assessment Act of 1964," P.L.1964, c.48 (C.54:4-23.1 et seq.) at any time within the 10-year period prior to the effective date of P.L.2012, c.24, provided, however, that the municipal planning board of a municipality in which a solar electric power generation system is located may waive the requirement of this subparagraph (a), (b) the system is not an on-site generation facility, (c) all of the facilities of the single

customer combined for the purpose of net metering aggregation are facilities owned or operated by the single customer and are located within its territorial jurisdiction except that all of the facilities of a State entity engaged in net metering aggregation shall be located within five miles of one another, and (d) all of those facilities are within the service territory of a single electric public utility and are all served by the same basic generation service provider or by the same electric power supplier. The standards shall provide that, in order to qualify for net metering aggregation, the customer's solar electric power generation system shall be sized so that its annual generation does not exceed the combined metered annual energy usage of the qualified customer facilities, and the qualified customer facilities shall all be in the same customer rate class under the applicable electric public utility tariff. For the customer's facility or property on which the solar electric generation system is installed, the electricity generated from the customer's solar electric generation system shall be accounted for pursuant to the provisions of paragraph (1) of this subsection to provide that the electricity generated in excess of the electricity supplied by the electric power supplier or the basic generation service provider, as the case may be, for the customer's facility on which the solar electric generation system is installed, over the annualized period, is credited at the electric power supplier's or the basic generation service provider's avoided cost of wholesale power or the PJM electric power pool real-time locational marginal pricing rate. All electricity used by the customer's qualified facilities, with the exception of the facility or property on which the solar electric power generation system is installed, shall be billed at the full retail rate pursuant to the electric public utility tariff applicable to the customer class of the customer using the electricity. A customer may contract with a third party to operate a solar electric power generation system, for the purpose of net metering aggregation. Any contractual relationship entered into for operation of a solar electric power generation system related to net metering aggregation shall include contractual protections that provide for adequate performance and provision for construction and operation for the term of the contract, including any appropriate bonding or escrow requirements. Any incremental cost to an electric public utility for net metering aggregation shall be fully and timely recovered in a manner to be determined by the board. The board shall adopt net metering aggregation standards within 270 days after the effective date of P.L.2012, c.24.

Such rules shall require the board or its designee to issue a credit or other incentive to those generators that do not use a net meter but otherwise generate electricity derived from a Class I renewable energy source and to issue an enhanced credit or other incentive, including, but not limited to, a solar renewable energy credit, to

those generators that generate electricity derived from solar technologies.

Such standards or rules shall be effective as regulations immediately upon filing with the Office of Administrative Law and shall be effective for a period not to exceed 18 months, and may, thereafter, be amended, adopted or readopted by the board in accordance with the provisions of the "Administrative Procedure Act."

f. The board may assess, by written order and after notice and opportunity for comment, a separate fee to cover the cost of implementing and overseeing an emission disclosure system or emission portfolio standard, which fee shall be assessed based on an electric power supplier's or basic generation service provider's share of the retail electricity supply market. The board shall not impose a fee for the cost of implementing and overseeing a greenhouse gas emissions portfolio standard adopted pursuant to paragraph (2) of subsection c. of this section.

g. The board shall adopt, pursuant to the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.), an electric energy efficiency program in order to ensure investment in cost-effective energy efficiency measures, ensure universal access to energy efficiency measures, and serve the needs of low-income communities that shall require each electric public utility to implement energy efficiency measures that reduce electricity usage in the State pursuant to section 3 of P.L.2018, c.17 (C.48:3-87.9). Nothing in this subsection shall be construed to prevent an electric public utility from meeting the requirements of this subsection by contracting with another entity for the performance of the requirements.

h. The board shall adopt, pursuant to the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.), a gas energy efficiency program in order to ensure investment in cost-effective energy efficiency measures, ensure universal access to energy efficiency measures, and serve the needs of low-income communities that shall require each gas public utility to implement energy efficiency measures that reduce natural gas usage in the State pursuant to section 3 of P.L.2018, c.17 (C.48:3-87.9). Nothing in this subsection shall be construed to prevent a gas public utility from meeting the requirements of this subsection by contracting with another entity for the performance of the requirements.

i. After the board establishes a schedule of solar kilowatt-hour sale or purchase requirements pursuant to paragraph (3) of subsection d. of this section, the board may initiate subsequent proceedings and adopt, after appropriate notice and opportunity for public comment and public hearing, increased minimum solar kilowatt-hour sale or purchase requirements, provided that the

board shall not reduce previously established minimum solar kilowatt-hour sale or purchase requirements, or otherwise impose constraints that reduce the requirements by any means.

j. The board shall determine an appropriate level of solar alternative compliance payment, and permit each supplier or provider to submit an SACP to comply with the solar electric generation requirements of paragraph (3) of subsection d. of this section. The value of the SACP for each Energy Year, for Energy Years 2014 through [2033] 2035 per megawatt hour from solar electric generation required pursuant to this section, shall be:

EY 2014 $339
EY 2015 $331
EY 2016 $323
EY 2017 $315
EY 2018 $308
EY 2019 $268
EY 2020 $258
EY 2021 $248
EY 2022 $238
EY 2023 $228
EY 2024 $218
EY 2025 $208
EY 2026 $198
EY 2027 $188
EY 2028 $178
EY 2029 $168
EY 2030 $158
EY 2031 $148
EY 2032 $138
EY 2033 $128
EY 2034 $118
EY 2035 $108.

The board may initiate subsequent proceedings and adopt, after appropriate notice and opportunity for public comment and public hearing, an increase in solar alternative compliance payments, provided that the board shall not reduce previously established levels of solar alternative compliance payments, nor shall the board provide relief from the obligation of payment of the SACP by the electric power suppliers or basic generation service providers in any form. Any SACP payments collected shall be refunded directly to the ratepayers by the electric public utilities.

k. The board may allow electric public utilities to offer long-term contracts through a competitive process, direct electric public utility investment and other means of financing, including but not limited to loans, for the purchase of SRECs and the resale of SRECs to suppliers or providers or others, provided that after such contracts have been approved by the board, the board's approvals

shall not be modified by subsequent board orders. If the board allows the offering of contracts pursuant to this subsection, the board may establish a process, after hearing, and opportunity for public comment, to provide that a designated segment of the contracts approved pursuant to this subsection shall be contracts involving solar electric power generation facility projects with a capacity of up to 250 kilowatts.

l. The board shall implement its responsibilities under the provisions of this section in such a manner as to:

(1) place greater reliance on competitive markets, with the explicit goal of encouraging and ensuring the emergence of new entrants that can foster innovations and price competition;

(2) maintain adequate regulatory authority over non-competitive public utility services;

(3) consider alternative forms of regulation in order to address changes in the technology and structure of electric public utilities;

(4) promote energy efficiency and Class I renewable energy market development, taking into consideration environmental benefits and market barriers;

(5) make energy services more affordable for low and moderate income customers;

(6) attempt to transform the renewable energy market into one that can move forward without subsidies from the State or public utilities;

(7) achieve the goals put forth under the renewable energy portfolio standards;

(8) promote the lowest cost to ratepayers; and

(9) allow all market segments to participate.

m. The board shall ensure the availability of financial incentives under its jurisdiction, including, but not limited to, long-term contracts, loans, SRECs, or other financial support, to ensure market diversity, competition, and appropriate coverage across all ratepayer segments, including, but not limited to, residential, commercial, industrial, non-profit, farms, schools, and public entity customers.

n. For projects which are owned, or directly invested in, by a public utility pursuant to section 13 of P.L.2007, c.340 (C.48:3-98.1), the board shall determine the number of SRECs with which such projects shall be credited; and in determining such number the board shall ensure that the market for SRECs does not detrimentally affect the development of non-utility solar projects and shall consider how its determination may impact the ratepayers.

o. The board, in consultation with the Department of Environmental Protection, electric public utilities, the Division of Rate Counsel in, but not of, the Department of the Treasury, affected members of the solar energy industry, and relevant stakeholders, shall periodically consider increasing the renewable

energy portfolio standards beyond the minimum amounts set forth in subsection d. of this section, taking into account the cost impacts and public benefits of such increases including, but not limited to:

(1) reductions in air pollution, water pollution, land disturbance, and greenhouse gas emissions;

(2) reductions in peak demand for electricity and natural gas, and the overall impact on the costs to customers of electricity and natural gas;

(3) increases in renewable energy development, manufacturing, investment, and job creation opportunities in this State; and

(4) reductions in State and national dependence on the use of fossil fuels.

p. Class I RECs and ORECs shall be eligible for use in renewable energy portfolio standards compliance in the energy year in which they are generated, and for the following two energy years. SRECs shall be eligible for use in renewable energy portfolio standards compliance in the energy year in which they are generated, and for the following four energy years.

q. (1) During the energy years of 2014, 2015, and 2016, a solar electric power generation facility project that is not: (a) net metered; (b) an on-site generation facility; (c) qualified for net metering aggregation; or (d) certified as being located on a brownfield, on an area of historic fill or on a properly closed sanitary landfill facility, as provided pursuant to subsection t. of this section may file an application with the board for approval of a designation pursuant to this subsection that the facility is connected to the distribution system. An application filed pursuant to this subsection shall include a notice escrow of $40,000 per megawatt of the proposed capacity of the facility. The board shall approve the designation if: the facility has filed a notice in writing with the board applying for designation pursuant to this subsection, together with the notice escrow; and the capacity of the facility, when added to the capacity of other facilities that have been previously approved for designation prior to the facility's filing under this subsection, does not exceed 80 megawatts in the aggregate for each year. The capacity of any one solar electric power supply project approved pursuant to this subsection shall not exceed 10 megawatts. No more than 90 days after its receipt of a completed application for designation pursuant to this subsection, the board shall approve, conditionally approve, or disapprove the application. The notice escrow shall be reimbursed to the facility in full upon either rejection by the board or the facility entering commercial operation, or shall be forfeited to the State if the facility is designated pursuant to this subsection but does not enter commercial operation pursuant to paragraph (2) of this subsection.

(2) If the proposed solar electric power generation facility does not commence commercial operations within two years following

the date of the designation by the board pursuant to this subsection, the designation of the facility shall be deemed to be null and void, and the facility shall not be considered connected to the distribution system thereafter.

(3) Notwithstanding the provisions of paragraph (2) of this subsection, a solar electric power generation facility project that as of May 31, 2017 was designated as "connected to the distribution system," but failed to commence commercial operations as of that date, shall maintain that designation if it commences commercial operations by May 31, 2018.

r. (1) For all proposed solar electric power generation facility projects except for those solar electric power generation facility projects approved pursuant to subsection q. of this section, and for all projects proposed in energy year 2019 and energy year 2020, the board may approve projects for up to 50 megawatts annually in auctioned capacity in two auctions per year as long as the board is accepting applications. If the board approves projects for less than 50 megawatts in energy year 2019 or less than 50 megawatts in energy year 2020, the difference in each year shall be carried over into the successive energy year until 100 megawatts of auctioned capacity has been approved by the board pursuant to this subsection. A proposed solar electric power generation facility that is neither net metered nor an on-site generation facility, may be considered "connected to the distribution system" only upon designation as such by the board, after notice to the public and opportunity for public comment or hearing. A proposed solar electric power generation facility seeking board designation as "connected to the distribution system" shall submit an application to the board that includes for the proposed facility: the nameplate capacity; the estimated energy and number of SRECs to be produced and sold per year; the estimated annual rate impact on ratepayers; the estimated capacity of the generator as defined by PJM for sale in the PJM capacity market; the point of interconnection; the total project acreage and location; the current land use designation of the property; the type of solar technology to be used; and such other information as the board shall require.

(2) The board shall approve the designation of the proposed solar electric power generation facility as "connected to the distribution system" if the board determines that:

(a) the SRECs forecasted to be produced by the facility do not have a detrimental impact on the SREC market or on the appropriate development of solar power in the State;

(b) the approval of the designation of the proposed facility would not significantly impact the preservation of open space in this State;

(c) the impact of the designation on electric rates and economic development is beneficial; and

(d) there will be no impingement on the ability of an electric public utility to maintain its property and equipment in such a condition as to enable it to provide safe, adequate, and proper service to each of its customers.

(3) The board shall act within 90 days of its receipt of a completed application for designation of a solar electric power generation facility as "connected to the distribution system," to either approve, conditionally approve, or disapprove the application. If the proposed solar electric power generation facility does not commence commercial operations within two years following the date of the designation by the board pursuant to this subsection, the designation of the facility as "connected to the distribution system" shall be deemed to be null and void, and the facility shall thereafter be considered not "connected to the distribution system."

s. In addition to any other requirements of P.L.1999, c.23 or any other law, rule, regulation or order, a solar electric power generation facility that is not net metered or an on-site generation facility and which is located on land that has been actively devoted to agricultural or horticultural use that is valued, assessed, and taxed pursuant to the "Farmland Assessment Act of 1964," P.L.1964, c.48 (C.54:4-23.1 et seq.) at any time within the 10-year period prior to the effective date of P.L.2012, c.24, shall only be considered "connected to the distribution system" if (1) the board approves the facility's designation pursuant to subsection q. of this section; or (2) (a) PJM issued a System Impact Study for the facility on or before June 30, 2011, (b) the facility files a notice with the board within 60 days of the effective date of P.L.2012, c.24, indicating its intent to qualify under this subsection, and (c) the facility has been approved as "connected to the distribution system" by the board. Nothing in this subsection shall limit the board's authority concerning the review and oversight of facilities, unless such facilities are exempt from such review as a result of having been approved pursuant to subsection q. of this section.

t. (1) No more than 180 days after the date of enactment of P.L.2012, c.24, the board shall, in consultation with the Department of Environmental Protection and the New Jersey Economic Development Authority, and, after notice and opportunity for public comment and public hearing, complete a proceeding to establish a program to provide SRECs to owners of solar electric power generation facility projects certified by the board, in consultation with the Department of Environmental Protection, as being located on a brownfield, on an area of historic fill or on a properly closed sanitary landfill facility, including those owned or operated by an electric public utility and approved pursuant to section 13 of P.L.2007, c.340 (C.48:3-98.1). Projects certified under this subsection shall be considered "connected to the distribution

system", shall not require such designation by the board, and shall not be subject to board review required pursuant to subsections q. and r. of this section. Notwithstanding the provisions of section 3 of P.L.1999, c.23 (C.48:3-51) or any other law, rule, regulation, or order to the contrary, for projects certified under this subsection, the board shall establish a financial incentive that is designed to supplement the SRECs generated by the facility in order to cover the additional cost of constructing and operating a solar electric power generation facility on a brownfield, on an area of historic fill or on a properly closed sanitary landfill facility. Any financial benefit realized in relation to a project owned or operated by an electric public utility and approved by the board pursuant to section 13 of P.L.2007, c.340 (C.48:3-98.1), as a result of the provision of a financial incentive established by the board pursuant to this subsection, shall be credited to ratepayers. The issuance of SRECs for all solar electric power generation facility projects pursuant to this subsection shall be deemed "Board of Public Utilities financial assistance" as provided under section 1 of P.L.2009, c.89 (C.48:2-29.47).

(2) Notwithstanding the provisions of the "Spill Compensation and Control Act," P.L.1976, c.141 (C.58:10-23.11 et seq.) or any other law, rule, regulation, or order to the contrary, the board, in consultation with the Department of Environmental Protection, may find that a person who operates a solar electric power generation facility project that has commenced operation on or after the effective date of P.L.2012, c.24, which project is certified by the board, in consultation with the Department of Environmental Protection pursuant to paragraph (1) of this subsection, as being located on a brownfield for which a final remediation document has been issued, on an area of historic fill or on a properly closed sanitary landfill facility, which projects shall include, but not be limited to projects located on a brownfield for which a final remediation document has been issued, on an area of historic fill or on a properly closed sanitary landfill facility owned or operated by an electric public utility and approved pursuant to section 13 of P.L.2007, c.340 (C.48:3-98.1), or a person who owns property acquired on or after the effective date of P.L.2012, c.24 on which such a solar electric power generation facility project is constructed and operated, shall not be liable for cleanup and removal costs to the Department of Environmental Protection or to any other person for the discharge of a hazardous substance provided that:

(a) the person acquired or leased the real property after the discharge of that hazardous substance at the real property;

(b) the person did not discharge the hazardous substance, is not in any way responsible for the hazardous substance, and is not a successor to the discharger or to any person in any way responsible for the hazardous substance or to anyone liable for cleanup and

removal costs pursuant to section 8 of P.L.1976, c.141 (C.58:10-23.11g);

(c) the person, within 30 days after acquisition of the property, gave notice of the discharge to the Department of Environmental Protection in a manner the Department of Environmental Protection prescribes;

(d) the person does not disrupt or change, without prior written permission from the Department of Environmental Protection, any engineering or institutional control that is part of a remedial action for the contaminated site or any landfill closure or post-closure requirement;

(e) the person does not exacerbate the contamination at the property;

(f) the person does not interfere with any necessary remediation of the property;

(g) the person complies with any regulations and any permit the Department of Environmental Protection issues pursuant to section 19 of P.L.2009, c.60 (C.58:10C-19) or paragraph (2) of subsection a. of section 6 of P.L.1970, c.39 (C.13:1E-6);

(h) with respect to an area of historic fill, the person has demonstrated pursuant to a preliminary assessment and site investigation, that hazardous substances have not been discharged; and

(i) with respect to a properly closed sanitary landfill facility, no person who owns or controls the facility receives, has received, or will receive, with respect to such facility, any funds from any post-closure escrow account established pursuant to section 10 of P.L.1981, c.306 (C.13:1E-109) for the closure and monitoring of the facility.

Only the person who is liable to clean up and remove the contamination pursuant to section 8 of P.L.1976, c.141 (C.58:10-23.11g) and who does not have a defense to liability pursuant to subsection d. of that section shall be liable for cleanup and removal costs.

u. No more than 180 days after the date of enactment of P.L.2012, c.24, the board shall complete a proceeding to establish a registration program. The registration program shall require the owners of solar electric power generation facility projects connected to the distribution system to make periodic milestone filings with the board in a manner and at such times as determined by the board to provide full disclosure and transparency regarding the overall level of development and construction activity of those projects Statewide.

v. The issuance of SRECs for all solar electric power generation facility projects pursuant to this section, for projects connected to the distribution system with a capacity of one megawatt or greater, shall be deemed "Board of Public Utilities

financial assistance" as provided pursuant to section 1 of P.L.2009, c.89 (C.48:2-29.47).

w. No more than 270 days after the date of enactment of P.L.2012, c.24, the board shall, after notice and opportunity for public comment and public hearing, complete a proceeding to consider whether to establish a program to provide, to owners of solar electric power generation facility projects certified by the board as being three megawatts or greater in capacity and being net metered, including facilities which are owned or operated by an electric public utility and approved by the board pursuant to section 13 of P.L.2007, c.340 (C.48:3-98.1), a financial incentive that is designed to supplement the SRECs generated by the facility to further the goal of improving the economic competitiveness of commercial and industrial customers taking power from such projects. If the board determines to establish such a program pursuant to this subsection, the board may establish a financial incentive to provide that the board shall issue one SREC for no less than every 750 kilowatt-hours of solar energy generated by the certified projects. Any financial benefit realized in relation to a project owned or operated by an electric public utility and approved by the board pursuant to section 13 of P.L.2007, c.340 (C.48:3-98.1), as a result of the provisions of a financial incentive established by the board pursuant to this subsection, shall be credited to ratepayers.

x. Solar electric power generation facility projects that are located on an existing or proposed commercial, retail, industrial, municipal, professional, recreational, transit, commuter, entertainment complex, multi-use, or mixed-use parking lot with a capacity to park 350 or more vehicles where the area to be utilized for the facility is paved, or an impervious surface may be owned or operated by an electric public utility and may be approved by the board pursuant to section 13 of P.L.2007, c.340 (C.48:3-98.1).

(cf: P.L.2021, c.169, s.10)

3. This act shall take effect immediately.

STATEMENT

This bill would direct the Board of Public Utilities (BPU) to establish a process to periodically assess and adjust the solar renewable energy certificate (SREC) program to ensure that there is an appropriate and stable ratio between the supply of, and demand for, SRECs in the State. The bill would also authorize the BPU to make adjustments to the solar renewable portfolio standard, a requirement established in law that a certain percentage of the

State's electricity be produced by solar electric power generators, in order to maintain an appropriate demand for SRECs.

The bill would direct the BPU to publish an initial rule proposal to implement the bill's provisions within 270 days of enactment. The bill would include certain minimum requirements for the rules and regulations, as enumerated in subsection b. of section 1 of the bill. These requirements include an assessment schedule such that an initial assessment of the SREC program would be concluded in sufficient time to enable adjustments, if any are determined to be required, in time for energy year (the 12-month period from June 1 through May 31, hereafter EY) 2025, and that subsequent assessments will be made no less frequently than would enable the implementation of any adjustments in EY 2030 and EY 2035.

The bill would also amend the "Energy Discount and Energy Competition Act," P.L.1999, c.23 (C.48:3-49 et al.), to authorize the BPU to adjust the solar renewable portfolio standard based on an assessment conducted pursuant to this bill and to adjust the law to account for SRECs that will be issued in EY 2034 and EY 2035.

SENATE, No. 2185

STATE OF NEW JERSEY

220th LEGISLATURE

INTRODUCED MARCH 7, 2022

Sponsored by:
Senator BOB SMITH
District 17 (Middlesex and Somerset)
Senator LINDA R. GREENSTEIN
District 14 (Mercer and Middlesex)

Co-Sponsored by:
Senator Diegnan

SYNOPSIS

Requires BPU to develop program to incentivize installation of new energy storage systems.

CURRENT VERSION OF TEXT

As introduced.

(Sponsorship Updated As Of: 3/14/2022)

AN ACT concerning energy storage systems and supplementing Title 48 of the Revised Statutes.

BE IT ENACTED *by the Senate and General Assembly of the State of New Jersey:*

1. The Legislature finds and declares that:

a. The electric grid is evolving from a system that relies on one-way, long-distance transmission of electricity from centralized power plants to customers, to a system that includes local energy sources located close to customers, who increasingly both produce and consume electricity;

b. Energy storage systems, distributed throughout the electric grid, can facilitate greater energy independence and energy security for the State's electric customers by providing increased stability of the power supply, smoother integration of renewable energy sources, a reduction in the peak demand placed on centralized power plants, and cost savings;

c. Locating energy sources and energy storage systems near the point of consumption enhances grid stability and increases efficiency;

d. Empowering New Jerseyans to take a more active role in the State's electric grid would leverage private capital, protect customers from rising energy costs, and promote greater understanding and engagement with the challenges associated with updating the State's electric grid;

e. There are currently significant barriers that disincline New Jersey electric customers from obtaining the benefits of distributed energy storage systems, including inadequate valuation of energy storage; and

f. It is fitting, proper, and in the public interest to encourage the installation of energy storage systems by providing monetary incentives to new energy storage systems and distributed energy sources paired with energy storage systems, until these barriers are removed by market forces.

2. As used in this act:

"All-in system cost" means the total cost of purchasing and installing a new energy storage system, including the costs of hardware, siting, installation, permitting, and interconnection.

"Board" means the Board of Public Utilities.

"Customer-sited energy storage system" means an energy storage system that operates in parallel with an electric distribution system, is connected on the customer side of the meter, and is owned by the customer or another party that is not the electric public utility that provides electric power to the customer.

"Electric public utility" means a public utility, as that term is defined in R.S.48:2-13, that transmits and distributes electricity to end users within the State.

"Energy storage system" means a commercially available technology that is capable of absorbing energy, storing such energy for a period of time, and redelivering the energy after it has been stored to provide direct or indirect benefits to the broader electricity system.

"Front-of-the-meter energy storage system" means an energy storage system that is interconnected to the transmission and distribution system on the utility side of the meter.

"Gap analysis" means an analysis that determines the difference between the average all-in system costs of energy storage systems, considering each energy storage technology and application, and the prevailing revenue stream opportunities to support the economics of the energy storage systems.

"Overburdened community" means the same as the term is defined in section 2 of P.L.2020, c.92 (C.13:1D-158).

"Performance incentive" means a series recurring monetary payments paid by an electric public utility to an owner of an energy storage system who participates in the pilot program to compensate for the benefits to the transmission and distribution system provided by the system.

"Pilot program" means the pilot program to incentivize the installation of new energy storage systems in the State developed by the board pursuant to section 3 of this act.

"PJM Interconnection, L.L.C." or "PJM" means the same as the term is defined in section 3 of P.L.1999, c.23 (C.48:3-51).

"Upfront incentive" means a one-time monetary payment from the board to an owner of an energy storage system who participates in the pilot program to mitigate the upfront costs of the system.

"Transmission and distribution system" means the same as the term is defined in section 3 of P.L.1999, c.23 (C.48:3-51).

3. a. No later than 90 days of the effective date of this act, the board shall initiate a proceeding to develop a pilot program to incentivize the installation of new energy storage systems in the State. The pilot program shall include an upfront incentive as set forth in section 4 of this act and a performance incentive as set forth in section 5 of this act for owners of energy storage systems that are approved by the board to participate in the program. The provisions of the pilot program shall be based upon the best available data from similarly designed programs in other states.

At the completion of the proceeding or 180 days after the effective date of this act, whichever occurs sooner, the board shall issue a board order establishing the pilot program. The order shall include the incentive amounts established for customer-sited energy storage systems and front-of-the-meter energy storage systems, and

an application process for persons who wish to participate in the pilot program. The upfront incentive amounts shall be based on the nameplate storage capacity of the energy storage system, as measured in kilowatt hours of alternating current power output. The board shall establish a cap on the total monetary value of incentives to be distributed through the pilot program, which shall be consistent with the Statewide energy storage goals established by subsection d. of section 1. P.L.2018, c.17 (C.48:3-87.8).

b. Stand-alone energy storage systems or energy storage systems that are paired with a distributed source of electric power, including, but not limited to, a solar photovoltaic array, shall be eligible for the program. However, the pilot program shall be available only to an energy storage system that:

(1) becomes operable on or after the date of the pilot program's establishment; and

(2) is either:

(a) a customer-sited energy storage system that is owned, leased, or operated by a residential or non-residential customer of an electric public utility; or

(b) a front-of-the meter energy storage system located in the service area of an electric public utility.

c. The board shall reserve at least one third of the upfront incentives for customer classes or deployment scenarios that face greater economic hurdles, including, but not limited to low-to-moderate income customers, customers sited in overburdened communities, and owners of stand-alone energy storage systems who do not qualify for federal investment tax credits.

d. In the course of developing the pilot program, the board shall consider revising the eligibility requirement for net-metering for solar energy systems that requires that the capacity of the solar energy system be no greater than the annualized electricity usage of the facility to which the solar energy system supplies electricity, in order to accommodate the inclusion of energy storage system capacity, as well as the potential for future electric vehicle capacity. The board shall include its recommendation in the report required by section 7 of this act.

e. The pilot program shall be designed to achieve or exceed, together with other programs established by the board, the energy storage goals established by subsection d. of section 1. P.L.2018, c.17 (C.48:3-87.8).

f. The program shall not prevent energy storage systems from providing services to, or participating in, the wholesale market. Any evaluation of costs and benefits of energy storage systems shall include benefits that accrue directly or indirectly to ratepayers due to the participation of the energy storage systems in wholesale markets.

g. The pilot program shall be closed immediately upon the adoption of the rules and regulations required pursuant to section 8 of this act.

4. a. The pilot program shall include an upfront incentive for energy storage system owners, which shall be based on the installed capacity of the energy storage system and provided in dollars per kilowatt-hour, and shall not exceed 40 percent of the project's all-in cost. When determining the amount of the upfront incentive offered to an energy storage system, the board shall perform a gap analysis to ensure that the incentive to the owner incorporates consideration of the difference between available revenue streams, including any performance incentive offered under the pilot program, and the all-in system costs of the energy storage system. The board may develop a system of incentive bonuses to differentiate between projects by attributes including, but not limited to, those serving low- and middle-income communities. After the expiration of the pilot program, the board may reduce or eliminate the upfront incentive commensurate with a Statewide reduction in all-in system costs for energy storage systems or an increase in revenue streams available to owners of energy storage systems.

b. The board shall establish qualifications and requirements an applicant shall be required to meet in order to be eligible for an upfront incentive pursuant to this section, which may be more stringent than the requirements of subsection b. of section 3 of this act.

c. For energy storage systems with 25 kilowatts of nameplate storage capacity or greater, the board shall require the applicant for an upfront incentive to pay to the board a refundable deposit, which shall be refunded once the energy storage system is determined by the board to be operable and in use. The board shall develop a formula for calculating the deposit amount, in which the amount of the deposit is proportional to the nameplate capacity of the energy storage system.

d. The board shall require an applicant for an upfront incentive to complete the energy storage project:

(1) for customer-sited energy storage systems, no later than 18 months after the date the board approves the applicant's application; and

(2) for front-of-the-meter energy storage systems, no later than 40 months after the date the board approves the applicant's application. An applicant that does not comply with the project timeline requirements of this subsection shall not be refunded the deposit paid to the board pursuant to subsection c. of this section. The deposit shall be transferred by the board to the General Fund. The board may waive or extend the project timeline requirements established by this subsection for an applicant that demonstrates extenuating circumstances that caused a delay in the completion of

the energy storage project, including any delays caused by an electric public utility or PJM.

e. The board shall limit upfront incentives to one award per electric meter, for customer-sited energy storage systems.

f. The board shall allocate at least $60 million per year, for the duration of the pilot program, from moneys collected from the societal benefits charge imposed pursuant to section 12 of P.L.1999, c.23 (C.48:3-60) to fund upfront incentives pursuant to this section. After the expiration of the pilot program, the board may determine the appropriate amount of funds to allocate to upfront incentives.

5. a. The pilot program shall include a performance incentive to compensate the owner of an energy storage system that is connected to the transmission and distribution system. The purpose of the performance payment shall be to:

(1) provide fair compensation for the full value of services provided by the energy storage system, including improving the efficiency of the transmission and distribution system and reducing the peak demand placed on electricity generators;

(2) increase the number of cost-effective energy storage systems that are connected to the transmission and distribution system;

(3) facilitate the integration of distributed sources of electricity generation; and

(4) increase the resilience of the transmission and distribution systems through the deployment of back-up power.

b. The board shall require each electric public utility in the State to offer an appropriate performance incentive, for a period to be determined by the board, to an owner of an energy storage system that participates in the program, which compensates for the operational attributes of the system, including, but not limited to, capacity, demand response, load shifting, generation shifting, locational value, and voltage support. The costs of the performance incentives shall be apportioned to ratepayers using a methodology approved by the board.

6. Each electric public utility in the State shall file a tariff with the board, no later than 12 months after the effective date of this act, that would apply only to front-of-the-meter energy storage systems connected to the transmission and distribution system. The tariff shall be formulated to provide front-of-the-meter energy storage systems with compensation for their value to the grid, as described in section 5 of this act. The tariff shall establish a new rate design for front-of-the-meter energy storage systems that accurately reflects cost causation, based on a cost of service study. The tariff may distinguish between different sizes and types of energy storage systems. The tariff shall exempt front-of-the-meter energy storage systems from charges intended for customers who consume electricity, including, but not limited to, the societal

benefits charge imposed pursuant to section 12 of P.L.1999, c.23 (C.48:3-60).

7. No later than one year after the date of the pilot program's establishment, the board shall conduct a review of the program and submit a report, pursuant to section 2 of P.L.1991, c.164 (C.52:14-19.1), to the Legislature that includes, but need not be limited to, details about the recipients of incentive payments, the total costs of upfront incentives provided through the program, an evaluation of the extent of energy storage capacity that has been deployed in the State as a result of the program, an evaluation of the distribution of different energy storage technologies deployed, and an analysis of the maturity of the energy storage market in the State.

8. No later than three years after the effective date of this act, the board, pursuant to the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.), shall adopt rules and regulations establishing a permanent energy storage incentive program. The permanent program shall be consistent with the provisions of this act.

9. This act shall take effect immediately.

STATEMENT

This bill would require the Board of Public Utilities (BPU) to develop a program to provide monetary incentives to persons who install new energy storage systems in the State.

Specifically, the bill would direct the BPU, no later than 180 days after the bill's enactment to publish incentive levels and an application process for an energy storage incentive pilot program. The pilot program would continue until the BPU adopts rules and regulations to establish a permanent program pursuant to the bill.

The bill would establish certain requirements for the program, including parameters for the types of energy storage projects that would be eligible for the program, as described in subsections a. and b. of section 3 of the bill. The program would be available to smaller energy storage systems that are owned by customers of electric utilities and sited in the customer's residence or business – referred to as "customer-sited energy storage systems" in the bill, as well as larger energy storage systems that are connected directly to the grid – referred to as "front-of-the-meter energy storage systems" by the bill.

The bill would also direct the BPU to reserve a portion of the incentives for energy storage systems that are owned by low-to-moderate income customers, customers sited in overburdened communities, and owners of stand-alone energy storage systems

who do not qualify for federal investment tax credits. The program would be designed to meet (or exceed) the State's goal of hosting two gigawatts of energy storage capacity by 2030.

The incentives would consist of an upfront incentive, described in section 4 of the bill, and a performance incentive, described in section 5 of the bill. The upfront incentive would consist of a one-time payment made by the BPU's clean energy program, which is funded by the societal benefits charge imposed pursuant to section 12 of P.L.1999, c.23 (C.48:3-60). The amount of the upfront incentive would be calculated using a "gap analysis," as defined in the bill, which would determine the difference between the all-in system cost of the system and the expected lifetime revenue that the customer could expect to gain from the system. "All-in system cost" is defined to mean the total cost of purchasing and installing a new energy storage system, including the costs of hardware, siting, installation, permitting, and interconnection. The bill would require applicants for an upfront incentive to pay a deposit and to meet certain timeline requirements, as described in subsections c. and d. of section 4 of the bill. The bill would specify that the $60 million per year of funds collected from the societal benefits charge would be allocated for upfront incentives for the three-year duration of the pilot program. The performance incentive would be a recurring payment made by the relevant electric utility, to compensate the owner of the energy storage system for services to the grid made by the system, including reducing peak demand and supplying power during outages.

The bill would direct each electric public utility to file a tariff (a pricing structure that includes rates and other charges) with the board that would apply only to front-of-the-meter energy storage systems. The tariff would be required to take into account the costs of, and benefits to, the grid caused by front-of-the-meter energy storage systems. The tariff would also be required to exempt front-of-the-meter energy storage systems from charges intended for customers who consume electricity, including, but not limited to, the societal benefits charge.

Finally, the bill would direct the BPU to submit a report to the Legislature on the pilot program no later than one year after the program is established.

Bob Smith
Chairman

Linda R. Greenstein
Vice-Chairwoman

Richard J. Codey
Edward R. Durr, Jr.
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NEW JERSEY STATE LEGISLATURE

SENATE ENVIRONMENT AND ENERGY COMMITTEE

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COMMITTEE NOTICE

TO: MEMBERS OF THE SENATE ENVIRONMENT AND ENERGY COMMITTEE

FROM: SENATOR BOB SMITH, CHAIRMAN

SUBJECT: **COMMITTEE MEETING - MAY 16, 2022**

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

The Senate Environment and Energy Committee will meet on Monday, May 16, 2022 at 10:00 AM in Committee Room 10, 3rd Floor, State House Annex, Trenton, New Jersey.

The committee will meet to hear testimony from invited guests on how food waste management and organics recycling can be used to mitigate greenhouse gas emissions in the State.

The following bill(s) will be considered:

Released/Sca S294 Greenstein	Provides for establishment of New Jersey Water Infrastructure Center at institute of higher education designated by DEP; appropriates $5 million.
Released/SCS S520 Cruz-Perez	Exempts commercial shellfish producers from prohibition on taking shellfish on Sunday.
Released S1229 Greenstein	Directs DEP to develop State water infrastructure investment plan; requires NJ Infrastructure Bank to publish additional information about water infrastructure projects; appropriates $200,000 to NJ Infrastructure Bank.

(OVER)

Released/SCS for S1983 & S1985 S1983 Cruz-Perez/Beach	"Retrofitted Green Building Tax Credit Act."
Released/SCS for S1983 & S1985 S1985 Cruz-Perez/Beach	"Green Building Tax Credit Act."
Released SJR73 Oroho/Gopal	Designates first full week of June each year as "New Jersey Fishing and Boating Week."

FOR DISCUSSION ONLY:

S431 Smith, B/Greenstein	Directs BPU to update interconnection standards for Class I renewable energy sources and develop fixed fee structure for interconnection costs.
S439 Smith, B	Directs BPU to establish process to maintain supply and demand for solar renewable energy certificates.
S2185 Smith, B/Greenstein	Requires BPU to develop program to incentivize installation of new energy storage systems.

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Members of the Senate Environment and Energy Committee
from Brian O. Lipman, Esq.
Director
Division of Rate Counsel
State of New Jersey 24x

pnf:1-84

SENATOR BOB SMITH (Chair): Welcome, everybody, to--

ALL (in unison): --the most interesting Committee in the Legislature. (laughter)

SENATOR SMITH: Where have you been? You're all regulars. You should know the answer to that.

Okay, so a big agenda today. Our first order of business -- as it has been for all the meetings so far in 2022 -- is a speaker on coming to the end of the world. And I'd like Mr. Isaac Bearg (mispronouncing the name) -- Are you here?

I S A A C B E A R G: Here; that's a *G*.

SENATOR SMITH: Isaac--

MR. BEARG: Bearg.

SENATOR SMITH: Bearg. Are you here, Isaac?

MR. BEARG: Bad handwriting.

SENATOR SMITH: I'm sorry.

And Isaac, if you would identify where you're from; and then, in a relatively short period of time, tell us how we stop the end of the world from coming too quickly. (laughter)

MR. BEARG: Well, I'll do my best, Senator.

Senator Smith and fellow Senators, thank you for your time today, and for the opportunity to testify on the important issue that is climate change.

We're very excited that we live in a state with Governor Murphy, and the State Legislature, and especially this Committee that has taken the

issue extremely seriously and has acted to address climate change, and is prepared to continue to do so.

So my name is Isaac Bearg; I'm Vice President and a founding member of the New Jersey Composting Council. We're a chapter of the U.S. Composting Council, a national organization. And our mission is to promote compost manufacturing, compost utilization, and organics recycling to the benefit of our member society and the environment in the State of New Jersey.

We specifically requested to speak before this Committee because, while we recognize that this Committee understands the importance of organics recycling, we feel it's often ignored in the broader discussion of climate change. This, of course, is a mistake. The statistic we most often use when talking about organics recycling is that, according to the EPA, organics rotting in landfills account for the third-highest source of methane emissions -- a greenhouse gas that, while short-lived, is far more potent than carbon dioxide.

As the 2021 U.N. report details, we need to reduce our methane emissions by 45 percent by 2030 to have a fighting chance at staving off climate change. So we can't wait to act on our waste sector.

In New Jersey, we currently have towns sending our trash to the state of Ohio, increasing our emissions from transportation and disposal, while handing our problems to somebody else. We have counties expanding their landfills to the tune of millions of dollars, all the while missing out on regenerative and climate-fighting opportunities to use compost for growing food, managing stormwater, and reducing harmful pollution from runoff. Not to mention the opportunity to reduce our dependence on

petroleum-based fertilizers and sequester carbon in the soil, which is needed over and above stopping our emissions.

This Committee helped pass the Food Waste Recycling Law in 2018, and it was a great accomplishment. But currently, its effects are limited for reasons I will discuss. We must do more.

With that in mind, I wanted to give a quick overview of the landscape of the organics recycling industry here in New Jersey, and discuss how we might be able to help. Currently in New Jersey, the primary organic feedstock that is being recycled and, in most cases, composted is green waste -- primarily leaves and yard waste. Now, the reason that's getting composted is because it's mandated to do so. But the rules also allow for some reasonable exemptions to the solid waste permitting that allows facilities of not insignificant size to get up and running with minimal hurdles.

There's also some biosolids composting happening, especially at a well-operated facility in Burlington, and some food waste in pockets. But it is a fraction of the waste that could be diverted from landfills and incinerators. Recently, we've had some AD facilities come online that will accept food waste. These are Trenton Renewable and Rahway Valley Sewage, in conjunction with CORe Waste Management facility. But these are the only two permitted food waste facilities that trigger the Food Waste Recycling Law the Senate passed in 2018 and came into effect last year. And while AD is a very good alternative, we need composting to realize the full climate value of organics recycling, including soil rehabilitation, fertilizer replacement, and beyond.

MR. GURRENTZ (Committee Aide): Could you define *AD*?

MR. BEARG: Sorry; *anaerobic digestion*.

MR. GURRENTZ: Thank you.

MR. BEARG: And that can be done co-digesting with biosolids or just straight food waste.

So part of the reason there are so few facilities is that permitting and confined costs are very high, especially for new facilities and new entrants. Which is, across the nation, where we see growth; from small to large over time. This is especially problematic for composting facilities, as opposed to AD, in light of smaller profit margins and fewer incentives for composting.

Additionally, while the Legislature has enacted the previously mentioned Food Waste Recycling Law, over two years later we do not have rules to implement that policy. There's no enforcement program in place, and the Food Waste Recycling Market Development Council -- which was established in that Bill -- a great decision -- has yet to meet. And there are limited reports that it's starting to appoint members, but it has yet to meet.

SENATOR SMITH: By the way, it would be very helpful for your group to make some recommendations about significant members who might have more information about it. If you would forward a list to us and a little description of their backgrounds, it would be really helpful.

MR. BEARG: Absolutely. We are prepared to do that.

So where do we go from here? We think the quickest solutions are probably small-scale food waste composting exemptions. A community garden should not need the same permit as a landfill. Today it does. Let's exempt community gardens and, perhaps, other small-scale projects entirely from solid waste, air, and stormwater permitting. These are small-scale solutions, but they can be acted on quickly.

If we want to go a step further, we can establish a system closer to what New York State and others have, which provides blanket exemptions under a certain tonnage; then a registration, which requires a slightly -- more information, but has a higher threshold. And then a permit is only needed once you get above a certain threshold.

So that's--

SENATOR SMITH: Your recommendation of what that threshold should be?

MR. BEARG: I think we have put together those in the past and worked with the DEP on that. But we're happy--

SENATOR SMITH: Could you forward it to us as well?

MR. BEARG: Yes. We're absolutely happy to do so.

Currently, the permitting process here in New Jersey is too long, too expensive, and too one-size-fits-all for composting. To the extent the Legislature can act on permitting, it would move the entire industry forward.

We can also help by incentivizing composting. Currently, there are no tax breaks or financial benefits for composting, or for generators that divert towards organics recycling. Grants and loans do not exist or are, at a minimum, difficult to find for facilities that want to start composting or businesses that want to cover the cost of starting a transition program.

In New York State, you can get costs associated with both of those covered, and that's specifically because their leadership has stated they're treating organics reduction and diversion as a way to meet their climate goals.

Another hurdle composters face -- and this is an issue you see in any environmentally friendly project -- is the not-in-my-backyard issue. No

one wants a solar farm in their backyard, much less a facility that's handling food waste. Yet, when properly run, these facilities are not a nuisance for their neighbors. Unfortunately, the neighbors are not convinced of that until the facility is up and running, and operating without issue. And this process then causes many delays, and that costs far too much for facilities trying to get permits.

There currently exists a Bill in the Legislature requiring county plans to incorporate food waste reduction. Now, we have colleagues in the environmental community who would opt for a different tactic in addressing county planning. But any bill that should move forward -- an action must include a plan for food waste recycling in addition to reduction. This would encourage the counties whose sign-off sign off is currently needed for facilities to take action by either operating their own food waste recycling operations, working with others in public-private partnerships, or, at a minimum, providing a preference for these projects, including, perhaps most importantly, over a lack of support of the town from whom they do not need approval, but will often withhold if they don't receive.

So we would also ask for the Legislature's help in ensuring the Food Waste Recycling Market Development Council, which I mentioned earlier, is finally appointed. Our members have suggested that New Jersey could implement a number of different things, working with the DEP and the Department of Agriculture, that would be particularly meaningful for the Food Waste Recycling Market Development Council. And I have a couple of them here that I won't read for you right now, but they're not considering it because they're not meeting.

So again, as I mentioned, we're happy to provide assistance and recommendations on appointments.

And then, thinking longer-term, there are many ways the Legislature can take it to, even, the next level. If we look at the laws in California about climate change, those require a far broader class of organics recycling. I don't know if New Jersey's there yet, but that may be something for the future.

People have suggested a small tax on trash generated that would support regenerative activities, including composting, as another opportunity. So there are a lot of things we can do.

And the last thing I'll mention is, we can help raise awareness. This testimony today is not insignificant. It was not until the end of my education, as an MBA in sustainability, that I learned about the issues of food waste and composting. And so raising awareness about this issue is critical. The first full week in May every year is International Composter Awareness Week. We have spoken to the Legislature and asked for it to be recognized with an official resolution. We were met with positive feedback, but that has not yet been accomplished. So that's another thing that the Legislature can very easily do.

So with that, I'm going to thank you for your time, and I'm happy to answer any questions.

SENATOR SMITH: So, in a nutshell, what you're saying -- our regulatory process is a little too crazy to encourage food waste recycling, and that a little bit of a subsidy would help.

Just for your information, we have the Recycling Enhancement Act now, that collects a little vig on solid waste disposal -- collection and

disposal -- and we may want to take a look at redirecting some of that money toward the efforts that you're talking about.

I didn't hear anything about-- I heard a lot about food waste composting, but how about on the reduction of methane generically? I mean, right now we have landfills that are taking in a lot of food -- almost all the food waste in the state. Some of them have collection systems, but they don't seem to be very good.

Do you have any recommendations concerning landfills?

MR. BEARG: So there are a lot of ways I can go there.

One of the things we try to do and work with landfills is to say, "If you want to extend the life of your landfill, and have to reduce investment in expanding it, one of the things you can do is get 40 percent of your material out of the stream, and composted, and back into a saleable product.

SENATOR SMITH: Or aerobic digestion to turn it into methane and burn it.

MR. BEARG: Sure, sure, sure. So I would say, even with anaerobic digestion there's usually some amount of solid product, which we would then say should go to composting. So yes, one way or another, if you want to extend the life of your landfill, you can get the organics out of there and create a saleable product at the end, whether that's gas and/or compost.

So from an economic standpoint, we're trying to promote that, as well as just from an environmental standpoint. Obviously, the less organics that are in a landfill, the less methane that's going to be generated.

SENATOR SMITH: Thank you very much for your testimony.

Any questions from members of the Committee for Mr. Bearg? (no response)

If not, thank you so much for coming in today.

All right; let's take a roll.

Oh, I'm sorry.

Governor.

SENATOR CODEY: *Anaerobic digestion*?

SENATOR SMITH: Yes, anaerobic digestion; yes.

SENATOR CODEY: Is that a new diet? (laughter)

SENATOR SMITH: No, no. No, it's allowing biological processes to occur in the absence of air and oxygen. That's what it actually is, but we get it. I mean, it's a very interesting question that you're asking because we have a little bit of a disagreement within the environmental community. Some people-- And that gas is called *renewable natural gas* -- the theory being that you are not allowing it to go into the atmosphere where it's going to have this 20- or 80-times impact of carbon dioxide. But you are going to burn it, and you're not going to make electricity.

So yes, you're consuming it in a more efficient and less environmentally impactful way if you do anaerobic digestion. But some of my good friends in the environmental groups feel not even that. But the alternative is much worse -- if you want it to go to the landfill and become methane, it's just going right into the atmosphere.

So thank you very much for your comments.

Let's call the roll so we can get some business done.

MR. HANSEN (Committee Aide): Chairman Smith.

SENATOR SMITH: I'm present.

MR. HANSEN: Vice Chairwoman Greenstein.

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

MR. HANSEN: Governor Codey.

SENATOR CODEY: Here.

MR. HANSEN: Senator Durr.

SENATOR DURR: Here.

MR. HANSEN: And Senator Stanfield.

SENATOR STANFIELD: Here.

(Committee unanimously passes S-294, S-520, S-1229, S-1983, S-1985, and SJR-73)

SENATOR SMITH: So we have three items for discussion only, and they're for discussion because they are controversial, and we want to hear all points of view.

So we're going to do them one at a time, and not do in a group of three. That doesn't work because each has its own separate issues. And hopefully, we get a little insight on what we should or shouldn't be doing as policy.

So number one that we're going to talk about is S-439, which directs the BPU to establish a process for maintaining supply and demand for solar renewable energy certificates. And this -- this is very controversial. We--

You know, maybe I'll let the witnesses do it and put it in context first, because that's a better way to do it.

All right; Mr. DeSanti, from the New Jersey Solar Energy Coalition, is in favor.

Come on forward, Fred.

F R E D D e S A N T I: Thank you, Senator.

Good morning. My name is Fred DeSanti; I'm the Executive Director of the New Jersey Solar Energy Coalition.

We support this Bill simply because it's fair. When we first started our path down towards solar energy in the State of New Jersey, we developed a system, a market-based system of SRECs -- where SREC prices would change and go up and down. It was immediately done on the basis of a balanced market, where the SRECs would be generated by the solar energy facilities, and people would pay for them based upon the need associated with that.

When that system was closed down, the statute said it should be done in a fair way; it should be done in a balanced way. So that the system was closed down to not jeopardize investments that people had made in the early stages of this solar energy. Because, at that time, as you recall, we had prices of about $8 a watt, or so. It was very, very high.

But New Jersey was a leader. New Jersey got into solar very early on. It was expensive, as we all know. But as that system is now closed down, it's important that we keep a balance. And by 2025, right now, based upon the numbers we see, there is going to be a significant pressure of having too many SRECs in the market.

And so what we would like to see is a balance, where the Board is required to establish that balance and make sure that these early investors are treated fairly in the process.

And it's that simple.

SENATOR SMITH: Okay. Thank you, Mr. DeSanti, for your comments.

Next, Lyle Rawlings, in favor.

Lyle, are you here? Yes.

And Lyle, are you representing you and your company, or MSSIA?

LYLE K. RAWLINGS: MSSIA, the Mid-Atlantic Solar and Storage Industries Association.

SENATOR SMITH: Okay.

MR. RAWLINGS: Senator, thank you for bringing forward this Bill, and for the opportunity to speak. And good morning, everyone.

Mid-Atlantic SSIA has done a great deal of analysis around this because we understand the question is if we do maintain a balanced and stable SREC market, are we going to be overpaying these projects that invested based on the Legacy SREC program?

And first of all, our analysis has shown that the market is likely to reach an oversupply condition that would be in the range of crash conditions for the value of the SREC. The investors invested somewhere around $10 billion worth of investment in this state, and the solar projects under that program were expecting a rate of return -- as the BPU stated originally -- around 12 percent. That's what it took to get people to invest early on in the program. That declined over time, capital got cheaper. But our analysis of a number of real projects -- for which we know the contract price, the contract PPA rate that provides revenue, etc. -- indicates that most of the investment that happened during that period is going to be seriously impaired. Not only not meeting the expectations of the time, but not even meeting the investment expectation that an investor today would expect. So these would be seriously hurt.

Now, the BPU promised, at the time that they took the vote, to close the SREC market under these conditions that they were -- and I quote exactly -- "committed to maintaining a stable and balanced SREC market in the years to come." And we believe this Bill is needed to fulfill that promise.

That's it.

SENATOR SMITH: Short and sweet.

MR. RAWLINGS: Yes; thank you.

SENATOR SMITH: Thank you.

For the record, Shannon Meyer-Johanson from Sol Systems, in favor, no need to testify.

Doug O'Malley, in favor, from Environment New Jersey.

Mr. O'Malley.

D O U G O ' M A L L E Y: Mr. Chairman and members of the Committee, it's great to be back. And obviously, I wanted to comment on this Bill, and I wanted to thank you, Mr. Chairman, for bringing up this series of bills on solar. Because obviously New Jersey historically has been a leader in the solar market.

However, if we look at the amount of megawatts produced last year, it was roughly around 300 megawatts. That fell drastically from the year prior. We are seeing New Jersey solar-- Compared to other states, we are kind of falling down the rankings. We're also seeing job loss in the solar market around the state.

So when we look at this Bill that we've previously heard, or the commitment from the BPU to maintain a steady transition in the SREC market, we believe this Bill does that. And the thing, I guess, I wanted to emphasize here is that we need to make sure that we're truly capturing the

true value of solar. And there's a report that Environment New Jersey put out three years ago that looked at a broad range of studies, some conducted by independent organizations, some conducted by utilities. And it showed that of the 16 studies, half of them showed that solar had a benefit of 14 cents per kilowatt-hour. That percentage, though, was not incorporating studies that had a thumb on the scale for the impact of reducing emissions. When you put the thumb on the scale for reducing emissions, the benefit and the value of solar goes up to 23 cents per kilowatt. Remember, this is looking at kind of a national collection of studies.

If we look at the actual research shown in New Jersey, conducted by MSSIA, the value goes up to 27 cents per kilowatt. And, in many ways, that makes sense, because we have such a congested energy grid in New Jersey -- that having more solar on the grid provides benefits more broadly for society because it's reducing emissions. And also benefits for ratepayers, because it meets peak load.

So that's just a kind of a reminder here that when we look at solar, we have to look at the true cost of solar and the benefits it provides.

And I'm happy to provide that research to members of the Committee.

SENATOR SMITH: Great idea. Send it-- I think you already have, but send it again, and we'll make a note to distribute it to everybody.

MR. O'MALLEY: Super.

SENATOR SMITH: Thank you so much.

Don Lepore, from True Concern Capital Management. Did I get that right?

D O N L E P O R E, Esq.: True Green Capital Management.

SENATOR SMITH: True Green; sorry.

MR. LEPORE: That's okay. My handwriting is a little atrocious; I apologize.

SENATOR SMITH: It's okay.

SENATOR CODEY: He didn't go to Catholic school, then. (laughter)

SENATOR SMITH: In favor, by the way.

MR. LEPORE: Good morning, Senators.

I wanted to thank you for the opportunity this morning to express my views.

True Green Capital Management is a dedicated renewable energy infrastructure firm and has invested in over 145 megawatts of solar generation facilities in New Jersey.

We share the concern expressed by our industry colleagues that the closure of the Legacy SREC program may create a severe imbalance in the supply and demand dynamics of the Legacy SREC program. And accordingly, we support the Bill proposed by Senator Smith, and likewise recommend its passage.

For over the past two years, True Green Capital Management, together with many of our industry colleagues, has engaged with the BPU staff on this important issue, and we greatly appreciate the time and attention the BPU has given to us. We believe that the current Bill is the natural outgrowth of these efforts, and provides the needed direction and clarity required by the BPU.

Maintaining balance in the SREC program is of paramount importance; and considerations of balancing supply and demand are common across comparable programs in other states where True Green Capital has invested, as well as in many programs in Europe. The Legacy SREC program requires maintaining such a balance to avoid both potential harm to ratepayers, as well as potentially wiping out billions of dollars of capital that has been invested in New Jersey.

This level of commitment is critical to maintaining investor confidence in the New Jersey market, not only under the Legacy program, but under a successor program and the State's clean energy goals generally.

We are hopeful that this Bill paves the way for a robust and balanced program in maintaining the confidence of investors in the New Jersey market.

I want to thank you again for your time and the opportunity to express our views.

Thank you.

SENATOR SMITH: Thank you, Mr. Lepore.

Scott Elias, Solar Energy Industries Association, in favor.

Mr. Elias.

S C O T T E L I A S: Hello.

Scott Elias with SEIA, Solar Energy Industries Association.

Chairman Smith, members of the Committee, thank you. My name is Scott, as I said. I am the Director of Mid-State Affairs for SEIA. We are the national trade association for the U.S. solar industry. We have about 45 member companies located in New Jersey, with many more national firms also conducting business in the state.

I'll be pretty brief here. We support this Bill and recommend its passage for many of the reasons that others have said. I think the key thing to note is that while the SREC program is closed for new participants, the SREC Legacy projects are eligible to earn SRECs over a 10- to 15-year period from those projects -- from when those projects initially went into service. And so, as a result, we're talking about over $13 billion in capital that has been invested by New Jersey families, businesses, schools, and communities; and we need to make sure that we retain investor value.

So this Bill is really about fairness, and ensuring that prior investments retain value as we transition over to the solar successor program.

So thank you for your time and attention. Again, we support this Bill.

Thank you.

SENATOR SMITH: Thank you, Mr. Elias.

Next is Lauren Kahme from Ecogy Energy, in favor.

Ms. Kahme.

L A U R E N K A H M E: Good morning, Committee; and thank you, Chairman, for sponsoring this Bill.

I would just -- I'll keep it brief, similar to what everyone before me has been saying.

Sorry; for the record, my name is Lauren Kahme, here on behalf of Ecogy Energy. We're a solar developer, financier, and owner/operator of distributed generation resources.

This Bill requiring the Board to implement metrics and mechanisms to measure the supply and demand for SRECs will help mitigate the volatility in the market. And as everyone before me has said, it will ensure

the current solar and early investments -- the assets, early investments are secure in the future.

So thank you for sponsoring this Bill, and we hope to see it pass.

Thank you.

SENATOR SMITH: Thank you, Ms. Kahme.

Ron Urban, Solar Clean Energy, in favor.

R O N U R B A N: My name is Ron Urban; I'm from Advanced Solar and Energy Solutions.

I am in favor of the Bill. I think without it, the industry will be dead.

That's all; thank you.

SENATOR SMITH: Shakespeare would be proud. (laughter) Brevity is the soul of wit.

Larry Barth, from New Jersey Resources, AKA Clean Energy Ventures.

Mr. Barth is in favor; if you would please come forward.

Go right ahead, sir.

L A R R Y B A R T H: Thank you. Good morning, Senators.

My name is Larry Barth, Managing Director at New Jersey Resources, representing our Clean Energy Ventures business unit.

Over the past decade, Clean Energy Ventures has invested about $1 billion and 370 megawatts of solar projects in the state, supporting approximately 1,000 jobs since inception and saving 300,000 tons of greenhouse gas emissions.

We very much appreciate the introduction of this Bill; we support it. We appreciate having a couple of minutes to talk about why we support it, and also some suggestions for possible improvement.

The Clean Energy Act of 2018 required -- in pursuit of a new solar incentive program required that we close the SREC program and open up a new incentive program. Thanks to a lot of hard work and leadership at the BPU, that's happened. The SREC market was closed April 30, 2020, and new solar incentive programs have been opened. I might add that those programs are providing incentives at significantly less cost than would be available under the SREC program.

We have-- Since the closing of the program, we've had discussions with the BPU -- as some of my colleagues have mentioned -- about the analysis that we've done that shows that in many scenarios, as this program will remain open until 2035-- Starting in the mid-2020s, out until the program stops operating in the mid-2030s, there is significant potential for a significant oversupply of material, oversupply such that many SRECs will be stranded and not expected to have any value. There are also some scenarios where we show some significant undersupply, but most of them are related to oversupply.

And the second point in that analysis is that there is no way within this program that it can self-correct. Unlike other markets -- commodity markets, where supply and demand can come back into balance -- it can't happen in this closed program. And I think one of the points that we want to make here is that this, while it is sometimes referred to as a *market*, it is not really a market. It is a program; it is the creation of policy. SREC demand is a function of the renewable portfolio standard that is in

statutes. The SREC supply is a function of the megawatts that have been put into the closed program, and how long those megawatts will be eligible to continue to earn SRECs.

Right now, the root cause we see of the imbalance is that there just is a significant misalignment between what the RPS says right now and what the actual megawatts in the closed program are, and how long those will be generating SRECs.

So as we come today to discuss the future, I want to be clear that investors in solar -- we take risks: we take development risks, we take construction risks, we take operating risks. We've also taken risks in the SREC program -- that there will be periodic fluctuations in supply and demand. Prices will go up and down, but on a temporary basis, not a permanent basis. And what we're seeing in our analysis is that some of the direction of the market will be permanent and perpetual, leading to stranded SRECs. And that's our concern. That's a risk that we did not sign up for.

Now, we don't feel, in any way, that State policy would encourage such a material adverse outcome. The State policy has always supported the solar market. When the SREC program was designed in 2007 -- and I have been around long enough to have been in a room when that happened -- there was always discussion about fluctuations in supply and demand and prices. But never permanent imbalances.

The other thing is, this Legislature has always stepped up when we've been -- in the past, whether it was 2012 or 2018 -- stepped up to make adjustments to the RPS when it looked like there were going to be material oversupply situations. In our discussions with the BPU-- The BPU has always supported the solar market in New Jersey. That's not for debate. In

fact, they've mentioned that their policy goal is a stable and balanced market. So we know the BPU supports this. And the Clean Energy Act itself provided very specific guidance that the solar market transition should be orderly. And there were also some solar market transition principles adopted by the BPU in December of 2018. It said we need to make sure that we ensure solar growth, and also ensure the prior investments retain value.

This Bill does some important work in clarifying the policy objective as to a stable and balanced market that we all believe is part of the State's policy. It also properly, we think, assigns accountability and responsibility for meeting that policy goal to the BPU. It should not be part of the Legislature's responsibilities.

Now, we have left in the Bill -- it's open as to what type of mechanism, operational mechanism will be developed to keep the market in balance. We did that deliberately to not be overly prescriptive. But I will say we've also had some engagement and discussions with the BPU on this. And it is possible that with some focused effort we could come back to this Legislature with, perhaps, something that's agreeable to the BPU and the industry; where it could be brought back as a package solution, giving the BPU the authority that they need to be able to implement that solution. That's possible; but again, our deliberate attempt was not to be overly prescriptive at this time.

So I want to thank you very much for introducing this Bill and giving me the chance to talk about it.

Thank you.

SENATOR SMITH: So listen, to all of the witnesses who testified on this legislation -- and generally very favorably -- I need you to

meet with the BPU. You know, I think it's time for re-engagement on this issue. Let's see if we can come up with an acceptable way to go ahead. It's like anything -- everybody knows the rule in Trenton, which is 41, 21, and 1, all right? So if the BPU is not going to be supportive, this gets short-circuited, and it doesn't get a Governor's signature on it.

On the other hand, you bring a valid concern to the table -- namely, that the State made some promises, especially early on with some of the solar developers; and I think it would be in everybody's best interest if the stakeholders can meet with the BPU and try to work out a plan for going forward. That would be very, very helpful. So let me give you that admonition.

Are there any questions from members of the Committee to any of the witnesses? (no response)

If not, this discussion is over, and let's go to the next discussion, namely S-2185, Senator Smith and Senator Greenstein, requiring the BPU to develop a program to incentivize new energy storage systems. And it's just exactly what it describes.

But I have to tell you the screaming scandal that we have in new energy, all right? The BPU was given a directive to get new energy storage systems. And I've told them this to their individual faces. They should be ashamed of themselves, because they used Yards Creek, 1965 -- built in 1965 -- as credit for them meeting our energy storage needs. And Yards Creek -- a wonderful facility. If you haven't been there during excess load-- They pump water up a hill to a mountaintop lake. And when there's a huge demand for electricity, they let it come back down and generate electricity. It's like the simplest energy storage system you can imagine. It does great work; it's been

doing great work since 1965. But come on, BPU. You can't take credit for that facility as meeting your energy storage needs -- the State's energy storage needs. There should have been some significant expansion; we're trying with this Bill to nudge them along.

So do we have witnesses on 2185?

Lyle Rawlings, MSSIA, in favor.

MR. RAWLINGS: Thank you, Chairman Smith.

First of all, this is an excellent Bill; sorely needed. The requirement in the Clean Energy Act of 2018 was to have a battery incentive bill by two years after that, which would be 2020, two years ago. So it's two years late, and we've already missed the first requirement of 600 megawatts by 2021. And we're getting to the point now where we're only less than eight years away from the 2030 requirement, which is for 2,000 megawatts. That's a lot of batteries and we haven't even gotten started.

SENATOR SMITH: So totally off -- well, not totally off the subject -- but we've introduced two budget resolutions -- one for the BPU, and the other for DEP -- and that is that they increase staff. Neither agency has enough staff to do their job. And as a result, they're both becoming dysfunctional. That's a little harsh, but somebody has to kick some butt here.

MR. RAWLINGS: Yes.

SENATOR SMITH: So I don't expect the budget resolutions will necessarily pass. But we're really doing a disservice to the people of New Jersey.

So that's my soapbox for the moment. I'm sorry.

MR. RAWLINGS: Well, I have to agree, Chairman Smith. They are understaffed and they're overloaded. They have a lot to do. The Clean Energy Act of 2018 was an enormous undertaking. Switching societal energy over to renewable energy is an incredibly vast and complicated task, and it's all falling on the shoulders of the BPU. So I do understand that.

But we do need to get working, not only to fulfill the requirements of the law, but just to keep the grid running with all of the renewable energy we're throwing at it. It's not going to happen without massive amounts of storage.

Furthermore, many State agencies, towns, and counties are preparing to do vital storage projects for microgrid operation. These are facilities that keep vital functions going. They're critical facilities: hospitals, senior living centers, transportation assets, sewage treatment plants -- a variety of things that we have to keep running during emergencies, which we learned during Hurricane Sandy. And they can do those tasks with new fossil fuel infrastructure, and many are planning to do so, not understanding that there are renewable energy alternatives.

One thing we do not want to do is build new fossil fuel energy infrastructure. But when it comes to either meeting those critical needs involving public health and safety, or building new fossil fuel infrastructure -- it's happening right now. So we're trying to turn the tide and switch those projects over to renewable energy resources. But there are projects that we know about that are holding up issuing the RFP, because how are bidders going to bid a solar-plus battery alternative if they don't know what the State incentives are going to be? So we're holding up real important critical

projects because of the lack of these incentives -- knowledge about what these incentives will be.

The one suggestion I would make of potential amendments to the Bill would be to put actual incentive levels. We have studied the matter and found that, because of market revenue that batteries can earn, the incentive levels that the BPU put into a battery incentive program -- a smaller one, many years ago; I think about eight years ago -- was a pretty high incentive level. We can cut that by a factor of three or four. And so I think it's appropriate to put actual incentive levels in the Bill. That way some of these critical projects can move forward with their RFPs. And also, we don't have to wait, who knows how long, for the deliberations that would come up with those.

The market studies are good news. We can, very, very dramatically, reduce these incentive levels. We would like to see them go in the Bill.

SENATOR SMITH: So we'd appreciate if you'd send us a communication from MSSIA, indicating what the appropriate levels of support may be. And let me say, you missed one; you missed a reason for us to be really doing this. And that is, we're going to save money for ratepayers. What costs us a lot of money is turning on those peaker plants -- very, very expensive electricity -- in a time of shortage, like summer air conditioning, etc. If you had that more battery storage around our grid, you would be able to take the rough edges off that to some extent. You'd need fewer peaker plants for a lower period of time, and that would save us all a lot on our rates.

MR. RAWLINGS: That's a very, very good point. And I also didn't mention that these batteries will help stabilize voltage on the grid. So brownouts, unstable voltage can happen all over the state. They can be tremendous assets that the utilities can use to keep our grid stable.

SENATOR SMITH: Thank you, Lyle.

MR. RAWLINGS: Thank you, sir.

SENATOR SMITH: All right, next is going to be Kimberly Giese from 174 Power Global.

While Kimberly's coming up, Shannon Meyer-Johanson, from Sol Systems, in favor, no need to testify. Sterling Clifford, from Sunnova Energy, in favor, no need to testify. And Julian Boggs, Keystone Energy Efficiency Alliance, in favor, no need to testify.

And so now, back to our next witness -- Kimberly Giese, from 174 Power Global, in favor.

K I M B E R L Y G I E S E: Thank you, Chairman, Senators, and Committee.

Basically, 174 Power Global is a nationwide developer of battery storage and solar projects. We do have projects in New Jersey already, as well as New York. We have three solar projects under construction in New Jersey right now, and we are also participating in the Connecticut Battery Storage Incentive Program that was released in January. And we did have one call with the BPU about that, to communicate what Connecticut was doing and to help assist in developing the New Jersey incentive program.

You mentioned peaker plants. We were awarded the 2019 ConEd RFP to build the 100-megawatt battery storage project in Astoria Queens, which is replacing an old coal- and gas-fired peaker plant. And that

battery storage facility, once built, will have enough energy to power 16,000 homes for four hours; and to your point, using inexpensive energy at night and releasing it during great times of great peaks of energy.

So basically, we support SEIA's comments, and we support an upfront and performance incentive program for battery storage. And the reason I gave you the background, and one of the main reasons why, is it does reduce the rates that ratepayers will pay, because it's much less expensive than building new peaker plants and larger distribution efforts. And we've done numerous projects and financial models, and without the Build Back Better Bill passing, and stand-alone storage ITC, we often have to couple, or try to couple the battery storage projects with solar to get the ITC. And the projects are just really difficult to pencil out, even with antennas, like in the Connecticut market. So we really need strong incentive programs to be able to develop these projects and help New Jersey reach its storage goals and have a greener, resilient grid.

SENATOR SMITH: Kimberly, let me ask you a question.

Lyle Rawlings said our incentive is too big -- that we should cut it down by a third or a fourth. Do you agree with that?

MS. GIESE: No; I think that you need strong incentive programs to make these projects work. And the whole industry just has really suffered because these projects take a long time to develop, and so contracts were signed two or three years ago--

SENATOR SMITH: Yes.

MS. GIESE: --where lithium's up, like, 400 percent. Labor is up, raw materials, steel-- There's a lot of steel in the platforms of these. And

they're just -- we're losing money on past projects, and we need assistance and help to get these built.

SENATOR SMITH: So do you think this new Federal money -- some of which is energy-related -- that storage facilities would be eligible for some of that Federal money?

MS. GIESE: It depends. I mean--

SENATOR SMITH: It always depends.

MS. GIESE: You know, we were planning on 26 to 30 percent ITC, which is a significant portion of these projects. And that's been stalled. And that alone makes a lot of projects just not pencil out. So again, we've been trying to pair the storage projects with solar, but in dense areas that just always isn't viable.

So we just really support S-2185 upfront, and performance incentives, to get these projects going and help New Jersey meet its targets.

SENATOR SMITH: Thank you, Ms. Giese.

MS. GIESE: Thank you.

SENATOR SMITH: We appreciate your testimony.

Fred DeSanti, NJSBO (*sic*), in favor.

MR. DeSANTI: Well, thank you again, Senator.

Fred DeSanti, New Jersey Solar Energy Coalition.

I don't want to just spend time echoing what I've heard up here. It's absolutely true; we need more help with the Board. There's clearly a need to get a lot of these policies in place.

What I want to spend just a minute about is the *duck curve*. We haven't talked about the duck curve, but I think we should. The duck curve, very simply, is a period of time, normally during the day, when there is more

renewable energy generated than is needed by the system. So what happens to the price of energy at that point? It goes negative, meaning that we end up paying fossil stations money not to run.

Now, think about the fact of how dysfunctional this is, in terms of consequences. If we took that same money and provided incentives for batteries and other energy storage facilities, we can take that same money and store that energy rather than paying people not to run. We're there; the duck curve exists in California, it's headed here in New Jersey because of the amount of renewable. We have to fix this.

Thank you.

SENATOR SMITH: Any questions for Fred? (no response)

Thank you.

Brett Simon, EOS Energy Enterprises, in favor.

Brett.

B R E T T S I M O N: I'm just going to get out my talking points.

Thank you so much for having me, Senator Smith, and for championing this important policy.

My name is Brett Simon. I am the Manager of Commercial Strategy at EOS Energy Enterprises. We have our headquarters and Battery Testing Lab in Edison, New Jersey. It's actually the largest privately held battery testing lab on the East Coast. And we manufacture our batteries in Turtle Creek, Pennsylvania.

We're very proud to be an American-based and manufactured zinc-based battery system. New Jersey still has a long way to go for their energy storage target. It was alluded to earlier, but to hit that 2,000-megawatt target by 2030, there's a lot of work that still needs to be done.

We're strongly supportive of this incentive, and we see this Bill as a great way to kickstart the energy storage market in New Jersey.

Just as we have seen done in other states like New York, Connecticut, and California, doing this will pave the path for a clean energy transition in our home state, and create opportunities for homegrown companies like ours. We also recommend that preference be given to energy storage products and service companies headquartered in New Jersey.

Thank you again for your time, and for supporting this crucial effort.

SENATOR SMITH: I like the thematic, but I enjoyed the commercial at the end. (laughter)

Thank you very much.

MR. SIMON: Thank you so much.

SENATOR SMITH: Doug O'Malley, Environment New Jersey, in favor.

MR. O'MALLEY: Thank you, Mr. Chairman; and thank you, members of the Committee.

Doug O'Malley, Director of Environment New Jersey.

Energy storage is probably the single-most important clean energy technology that we don't talk enough about, and we don't invest enough in. And I wanted to thank you, Chairman Smith, for your comments in the budget resolution to get more funding to DEP and the Board of Public Utilities. If you'd look at comparable institutions in other states, like Minnesota and New York, they have tremendously more resources. And the historic investments in our State agencies, specifically for the BPU and the DEP, have decreased precipitously over the course of the last decade-plus.

I'd also want to specifically highlight the funding source for this Bill, which is critical, right? We're talking about $60 million which can jump-start energy storage in this state and allow us to hit the Energy Master Plan goals. Of course, that funding comes from the Societal Benefits Charge and Clean Energy Fund. And I wanted to thank you as well, Mr. Chairman, for your support previously on any of the raids of the Clean Energy Fund. We have a historic surplus in front of the Legislature with this year's budget. This is the time to end those raids so we can actually spend those dollars on clean energy programs, like energy storage.

I wanted to highlight--

SENATOR SMITH: We reduced the raids, but there are still raids going on.

MR. O'MALLEY: Yes, that is correct. It was $1.5 billion that was raided in the Christie era, and it's close to $500 million in the Murphy era. So they are still significant, as you noted.

I wanted to make just a couple of comments regarding this particular Bill. There is actually some great language in this legislation. We're referencing not only performance incentives, but also separating out a customer energy storage, and specifically prioritizing energy storage for low-to-moderate-income customers, as well as overburdened communities. That is critical here because this isn't just about the (indiscernible) and large energy storage installations. It's also about incorporating storage into homes, and then being able to make our communities more resilient. That provides, obviously, a broad benefit to the grid.

Chairman Smith, you referenced earlier the importance of storage to reduce peaker plants. That's hugely important. Obviously, one of the ways you do that is by having more storage distributed everywhere.

Thank you so much.

So I'm hoping, someday in New Jersey, every EV -- electronic vehicle -- is a battery for the grid.

MR. O'MALLEY: Exactly, exactly.

SENATOR SMITH: Thank you, sir.

Evan Vaughan, from MAREC Action, in favor of the Bill.

Evan.

E V A N V A U G H A N: Thank you, Mr. Chairman, members of the Committee, Vice-Chair Greenstein.

I want to thank you for introducing this very important piece of legislation and leading this important discussion on energy storage issues.

My name, for the record, is Evan Vaughan. I'm Deputy Director of the Mid-Atlantic Renewable Energy Coalition, or MAREC Action for short. We are a membership organization of utility scale, solar wind, and battery storage developers that operate in the PJM grid.

As you know, Chairman Smith, your leadership was instrumental in getting the 2018 Energy Storage Goal for the State passed. And we were very appreciative of that goal, and these new efforts now to get that goal implemented and to get these projects built.

We support this Bill because it establishes an innovative energy incentive program to drive new energy storage deployment; contributes to more affordable, reliable, and resilient electricity supply for the State of New Jersey; and it will facilitate more clean energy use in the state.

Specifically, we think the Bill's approach to incentives, piloting both an upfront deployment incentive, as well as a performance incentive -- which will more efficiently reward battery storage projects for their services that they provide to the grid -- will help to jumpstart this industry. Ultimately, the information gained from the pilot, as outlined in the legislation, would establish a long-term program to sustain storage development and build a 21st-century grid for New Jersey.

MAREC Action is eager to see Senate Bill 2185's regulatory updates, which would alleviate one of the biggest challenges to front-of-the-meter storage -- which is what our members are primarily concerned with -- namely, the lack of utility tariffs grounded in the cost of service associated with adding that storage to the grid.

As you noted, Senator Smith -- and I was very glad to hear this -- we believe it is key to provide the Board of Public Utilities with resources to do this; not just quickly, but also to perform quality analysis and make sure that this is done right. The more quickly that these robust energy storage goals can be achieved with this legislation and the previous goal, the more quickly consumers will see benefits, including cost savings from reducing those peak energy-demand hours. And those benefits will only grow as New Jersey expands and achieves its RPS standards.

So again, thank you for this -- your leadership on the issue. We support the Bill.

SENATOR SMITH: You just stimulated a crazy idea. And I'll throw it out there.

What do you think about New Jersey setting up its own energy storage utility? In other words, instead of giving money to individual utilities

or incentivizing, they do it themselves. And that way, you could guarantee-- First of all, there would be no profit incentive. So forget the 12 percent a year forever. And then New Jersey could locate the energy storage wherever it thinks the grid would be most strengthened by it. And it could be reimbursed by Societal Benefits Charges, or in some other way, so it wouldn't necessarily impact rates. Just something to think about. I'm going to throw that out there. You don't have to give me an answer to it now (laughter), but if you want to, we're willing to respond.

MR. VAUGHAN: We'll discuss it with our members. Yes, I always like inspiring crazy ideas, so I feel like I've done my job here.

Thank you, Senator.

SENATOR SMITH: And by the way, does any other state do that? Does any other state have an independent corporation, or a state-run corporation, that makes sure that what it wants to happen to the grid actually happens? The utilities aren't doing it.

MR. VAUGHAN: Yes, I'll have to put some thought into it.

SENATOR DURR: That would be putting your finger on the scale. I don't think the government should be involved.

SENATOR SMITH: You don't like the finger on the scale? All right.

SENATOR DURR: Let business do business; government -- just regulate.

SENATOR SMITH: If they do business.

The next Bill you're going to hear what the real--

SENATOR DURR: Don't have the government put their finger on the scale and picking winners and losers.

SENATOR SMITH: Wait till you see the next Bill. (laughter)

But anyway, something for people to think about.

MR. VAUGHAN: Thank you.

SENATOR SMITH: So Ben Graziano and Jeremy Connor, State Street Associates and New Idiom Energy.

First, you have to tell us how to pronounce it. And you'd like amendments -- in favor, but you'd like amendments.

B E N A. G R A Z I A N O: Yes.

Good morning, Chairman; it's still morning.

Ben Graziano from State Street Associates; this is Jeremy Connor from Novitium Energy. They are a Jersey-based commercial solar producer.

We appreciate the opportunity to testify on 431 today. I think it's an interesting Bill. It deals with a big issue, which is interconnection. And as New Jersey has a very ambitious--

SENATOR SMITH: I think you're on the wrong Bill.

MR. GRAZIANO: Oh; we were supposed to be on 431. Did we--

SENATOR DURR: We're on 1285 (*sic*).

SENATOR SMITH: You signed a slip for 1285 (*sic*).

MR. GRAZIANO: Oh, it should have been 431; I apologize.

SENATOR SMITH: So do you have any comments for 2185?

MR. GRAZIANO: Briefly, because I think that 2185 can fit in, sort of like with what our recommendations were for 431. I mean, we're supportive of an idea of moving towards an incentive for battery storage, because we actually think that battery storage should be part of 431.

SENATOR SMITH: Okay.

MR. GRAZIANO: Yes.

SENATOR SMITH: All right; and you're going to have your comments on the last one?

MR. GRAZIANO: Yes, the last one.

SENATOR SMITH: Larry Barth, New Jersey Resources, AKA Clean Energy Ventures.

Larry, in favor.

MR. BARTH: Thank you, Senator.

We like this Bill.

Larry Barth, with New Jersey Resources.

We like this Bill. Two very slight modifications we'd request today. One is to explicitly recognize hydrogen storage as a storage technology. Now, I think some of my colleagues today have illustrated that -- they've said -- when they referred to energy storage, it's *battery storage*, *battery storage.* Hydrogen is something that's really kind of come up quickly in terms of its potential. So in the scenario Mr. DeSanti just mentioned, where you have excess renewable energy, clean energy, that can be used in electrolysis to split water to capture hydrogen that can either be blended into the gas system to decarbonize gas, or can be captured and stored as pure hydrogen and put back into the electric system through a fuel cell. So we just would like the mention of it in the Bill.

SENATOR SMITH: So I think that's absolutely reasonable. And everyone should know that Joey Gurrentz, who is the Committee Aide, has a Ph.D. in chemistry. And what he did his work on was electrolysis.

MR. BARTH: Wow.

SENATOR SMITH: So there you go. (applause) We have a lot of expertise here.

MR. BARTH: And I can tell you--

SENATOR SMITH: Good suggestion.

MR. BARTH: And I can tell you from working with him, he's a pleasure to work with.

SENATOR SMITH: Yes.

MR. BARTH: The second is, we suggest-- In the Bill, it suggests that the BPU take a look at net metering in the context of storage. So that's kind of looking at rate structures. We think it's important that they also look at time-of-use rates, right? Because we're talking about ways to shift load. If we do a good job with rate design, we can really encourage the behaviors that shift load, and then storage is one of those technologies that can meet that goal. And really it gets us having a discussion now about -- less about incentives, but more that we've designed the rate structures that really encourage the kind of behaviors we're looking at. And then storage becomes adopted, not because of incentives, but because it makes sense for people to move from on-peak charging to off-peak charging.

And as you know, it's going to be extremely important, as we talk about electric vehicles, that we do that, get that right. Otherwise, we're going to be adding a tremendous amount of load and adding all the infrastructure requirements on the electric system. So we have to get that right.

So time-of-use rates, I think, and storage go hand-in-hand. And I think, at the end of that, we'll get a better result in terms of understanding that maybe we need less direct incentives, and that the rates themselves can do a lot of the work.

SENATOR SMITH: By the way, what do you think about Mr. Rawlings' comment that the incentive for storage could be one-third or one-quarter less?

MR. BARTH: Well, I don't know; I haven't looked at his analysis. But in the back of my mind, I'm thinking that maybe that's where he's going -- is that if we do have better rate structures, then what you're going to actually need to compensate people to get them to adopt these technologies may be less if we really have a good on-peak rate, and a good off-peak rate, and good differentials that might actually encourage the behavior to adopt storage without needing as much direct incentive.

So it's something, I think, we really have to be looking at.

SENATOR SMITH: I appreciate your comments.

MR. BARTH: I gave our suggestions to Joey, and I appreciate your considering them.

SENATOR SMITH: Absolutely.

MR. BARTH: Thank you.

SENATOR SMITH: Thank you very much for your comments.

Lauren Kahme from Ecogy Energy, in favor.

MS. KAHME: Thank you.

Yes, I'll keep it brief.

Ecogy supports this Bill. We think that expanding battery storage opportunities in New Jersey, obviously, is not only obligatory pursuant to Bill A-3723 from 2018 -- which established the 2000-megawatt goal by 2030 -- but it is also beneficial for the local economy of New Jersey as a state. Ecogy's portfolio includes battery energy storage, which we currently have in other states throughout the Northeast. Developers like us

at Ecogy will only have reason to bring our storage technologies to New Jersey with such incentives.

So we look forward to seeing this program -- the pilot program introduced. And hopefully, a more engaged stakeholder process, as well, while it's being developed.

So thank you for your time.

SENATOR SMITH: Thank you, Ms. Kahme.

The last witness is Scott Elias from the Solar Energy Industries Association, in favor.

Mr. Elias.

MR. ELIAS: Chairman Smith, members of the Committee, Scott Elias. I am the Director of Mid-Atlantic State Affairs for the Solar Energy Industries Association.

I mentioned before we have about 1,000 member companies, but what we do is both solar and, increasingly, storage. And so our members are increasingly interested in whether they can invest in energy storage within New Jersey.

We support Senate Bill 2185 and recommend its passage to maintain New Jersey's position as a clean energy leader. And to achieve the Murphy Administration's Energy Master Plan goal of 100 percent clean energy by 2050, we need to ramp up energy storage in New Jersey. This Legislature took a critical step in 2018, when it set out its visionary goal of 2,000 megawatts of energy storage by 2030. But New Jersey needs effective policies, programs, and mechanisms to actually reach those targets.

We specifically support this legislation directing the BPU to develop an energy storage incentive pilot program, with $60 million per year

for the duration of the pilot program, before creating a permanent program. And we support the combined approach of upfront incentives for customers for every kilowatt-hour of energy storage capacity they install, with performance payments -- where utilities will literally pay customers to allow them to dispatch power from their energy storage systems when demand for electricity is at its highest, which is providing needed grid services that benefit all ratepayers.

This approach incorporates best practices from several states in New England and New York. And it's a cost-effective way to encourage the deployment of capital and the development of both behind-the-meter storage and in-front-of-the-meter storage at the distribution and transmission level. Put simply, this will reduce the upfront cost of storage technologies. It will normalize and expand solar-plus storage as a product offering in the market, as well as stand-alone storage as a product offering in the market. It will improve customer resilience to grid outages, and it will provide storage solutions to vulnerable communities.

States with successful energy storage policies have programs focused both on the deployment and optimization of energy storage resources. And that's what this Bill does, with a wide degree of flexibility offered to the BPU in how to get the job done.

We also support the Bill's requirement that a third of the incentives for energy storage be reserved for low-income customers, and customers in overburdened communities who are most at risk for storm-related outages. And while the Bill suggests that adders can be considered, we do suggest that the BPU embrace a system of incentive bonuses, or adders, for projects serving these LMI communities.

Finally, if the objective is to normalize and expand solar-plus storage as a product offering in the market, one area where we think the Bill can be improved is adding language to support customer- and third party-provided and owned meter-collared adapters, deployed for the purpose of isolating a customer's electrical load to enable the provision of backup power. Colorado recently passed a bill that does this. This will save customers installing combined solar and battery storage systems hundreds, if not thousands of dollars. And it will dramatically reduce installation timelines.

And we're happy to follow up with Joey with more details on that suggestion.

So in conclusion, as climate impacts worsen, we need to make sure energy storage is a driving piece of New Jersey's clean energy future. This Bill will foster a business environment that captures the benefits of energy storage on both the customer side of the meter, as well as the utility side of the meter, and create a long-term demand signal that New Jersey is a place to invest in the deployment of energy storage.

So thank you, and I'm happy to answer any questions.

SENATOR SMITH: Any questions for Mr. Elias? (no response)

Thank you very much for your comments.

Mr. Elias was our last witness on 2185, which, of course, was for discussion only. The comments were very, very helpful and informative.

And our last hearing (*sic*) of the morning is S-431, Smith/Greenstein, pending referral. It directs the BPU to update interconnection standards for Class 1 renewable energy sources, and develop the fixed fee structure for interconnection costs.

So let me put this a little bit in perspective, but we'll hear more from the witnesses.

Last year we -- and actually over the course of the year -- we did everything we could to promote solar. When you look at the cost of solar, grid-scale solar is about 40 percent of the cost of rooftop solar. Rooftop solar is a little bit expensive. We have been criticized in *The Star-Ledger* -- Tom Moran's article a few Sundays ago, saying, "Too damn expensive." And, in fact, we spend $800 million a year in subsidies for solar programs. A lot of money.

We're not doing enough to do grid-scale solar. Even though last year, you may remember, we found a way to get 5,000 acres of farmland, of our huge inventory, to be accessible to grid-scale solar. We did dual-use solar, where you can continue farming and put solar on the fences overhead -- whatever -- so you can do it in agricultural communities. And by the way, with the support of all the farm people -- Farm Bureau, Department of Agriculture. It included, as well, a pilot program to see what's the best kind of farm solar -- North, Central, and South Jersey. It's Rutgers University doing a study and a pilot program. And it ain't happening. We're not getting grid-scale solar in the state. And the reason we're not getting grid-scale solar in the state is interconnection problems. The interconnection problems are -- if you are trying to do a grid-scale project, you have to make an application to the local utility. And the local utility -- depending on which one; and we all know who's really horrible at it -- but depending on which one, will take six months, a year, 18 months to give you the answer. And the answer is, how do you have to change the grid in order to take the grid-scale solar (indiscernible) this new facility?

SENATOR DURR: So you agree; we have too much red tape in this government. (laughter)

SENATOR SMITH: We have way too much red tape. And added to that, all the incentives are wrong. You may remember that we deregulated the electric world in New Jersey so that utilities are now plumbers. They're now the people who are the pipes to get electricity to a customer. They're not generators. The theory being by separating the two of them you're going to have a more economically efficient system. I voted against it then; and if it was up again, I'd vote against it now, because it just hasn't worked. All the promises for deregulation were *lies*. It has not made this State better in terms of either the stability of the grid, or providing electricity more efficiently -- blah, blah, blah, blah blah.

So you now have utilities having the yes or no button. And the yes or no is not only can you connect to my grid, but here's a bill for how much it's going to cost for the revision to the infrastructure. And even though they're not in the energy generation business, it's not happening.

So I have to ask, "What's the problem?" And by the way, the other entity at fault, besides us -- because we're the Legislature, and we're supposed to be setting policy -- but the other entity is the BPU, because they're not requiring utilities to upgrade that part of the grid that they have. There are various parts of the grid that just couldn't do grid-scale solar. So we're all at fault, all right?

So this Bill has two ideas in it. The one idea is that we adopt what's called I-RECs standards. I-RECs standards are, for lack of a better phrase, the best practices for interconnections. They actually help getting more interconnections. And the other one is support for modernizing the

grid. When you have solar developers applying to connect, or anybody to connect, there's going to be a small vigorish set by how much electricity you're putting into the grid. But only for the purpose of upgrading the grid, all right?

So that's what's in the Bill. And I have a wild and crazy idea to add to it, but I don't know if I'll add to it now. Some states are -- maybe I'll mention it -- some states are going with a no-export concept. And that is -- you want to cut the wires to the utility? So you become an independent entity. You generate power for hospitals, school systems, a whole bunch of residential homes. You can do that, but you can't depend on the grid. So you have to have battery storage and you have to have emergency generation capability. And what it does--

SENATOR DURR: Doesn't that add the risk of what happened in Texas?

SENATOR SMITH: Well, I think a reasonable imitation of that. But that's not in the Bill. But if you have any comments, I'd love to hear them.

So this one we have the most slips. Let me see if there's anybody who doesn't want to testify. And again, it's for discussion only. We want to vet this; we want to find out what the problems are.

So Elena Wiseman, Vote Solar, in favor, no need to testify. Sterling Clifford, from Sunnova, in favor, no need to testify. Shannon Meyer-Johanson, from Sol Systems, in favor, no need to testify. Larry Barth, New Jersey Resources, AKA Clean Energy Ventures, in favor, no need to testify. I have one in opposition, which is good too.

So that cuts the stack a little smaller.

Let me ask Fred DeSanti to come up, because Fred brought forward a whole bunch of these ideas. So I think you're going to be the best spokesman on why you think it's necessary.

MR. DeSANTI: Thank you, Mr. Chairman. I very much appreciate the opportunity.

SENATOR SMITH: A little identification.

MR. DeSANTI: Fred DeSanti, New Jersey Solar Energy Coalition.

I appreciate the opportunity. This is a very important, very complicated Bill.

I would first like to compliment the Committee -- and I failed to do this earlier -- but I know at the last meeting it was mentioned that we are now 20 percent lower in environmental emissions than we were in 2006. And that's a very significant achievement, and I think that this Committee really, really deserves a round of applause for the work that they've done in achieving that, as these are policies that have been born here.

SENATOR SMITH: That being said, we haven't done enough.

MR. DeSANTI: Well, that's why we're here.

SENATOR SMITH: Okay.

MR. DeSANTI: S-431 represents an important step in creating actionable plans. These are practical plans to meet the goals set forward by Governor Murphy and the Board of Public Utilities.

The problems currently facing the solar industry are unprecedented. And if we're going to move forward, we need the kind of practical, clear-thinking approaches that exist in this Bill. Rough justice, basically, is what this comes down to.

I'd like to begin by calling your attention to some maps that I distributed, if you have these (indicates).

This is actually right from the Internet; you can get these. And this shows the Atlantic City Electric territory.

I would call your attention to the circuits that are shown in black. Those are circuits that are completely closed down. If you're a resident, a homeowner, and you call up and say, "Geez, I'd like to have solar on my roof," even though it's 8 to 10 kilowatts, which is a very small amount of power, you're going to be told, "No. You live in a place where we can't accommodate any additional." What is not said is that while you can't put solar on, you're still paying for it. As a customer, you're paying for the Clean Energy Program. The solar program is an expensive part of that. So here in black, you've got constituents and you've got customers who are paying for a program that they can't participate in. And this is in a lot of your districts right now -- thousands and thousands of people.

If you look at the red, you're looking at the areas that can accommodate no more than 250 kilowatts. Two hundred fifty kilowatts is about 25 homes; we're talking about a small amount of power. So that means you can't host community solar there. You certainly can't do grid supply there. You can't host anything but a couple of residential, maybe a small retail or warehouse facility. But essentially that's pretty close to being closed as well.

So you take out the red and black, and that leaves you with the yellow. Yellow goes from up to 500 kW, which, again, is not very big. You still can't--

SENATOR SMITH: Fifty homes.

MR. DeSANTI: Fifty homes. You got a situation where you still can't do community solar. You still can't do grid supply. So you're basically down to the green, and you'd have to be into the dark green, actually, to get into the one-and-a-half megawatt area where you can start to bring in.

This is a pretty serious problem because, right now, under the requirements of Atlantic City Electric, they will not take more than three megawatts of renewable energy on a circuit. That's not a lot.

So we're dealing with a situation that's upon us now. I mean, this is not far-reaching, this is not something that exists in the future. This is the way it is today, and it's a real problem.

I think it's very important and fair to compliment Atlantic City Electric. I want to repeat that. I want to compliment Atlantic City Electric, and here's why. In December of 2020, they proposed a base rate case. And in that base rate case, they, in and of themselves, suggested that $10 million of base rates be set aside to begin to open up these circuits. They had 38 circuits closed at the time. They identified 19 transformers that needed to be upgraded. And as soon as we heard about that -- my organization, New Jersey Solar Energy Coalition, Lyle, Scott -- we pooled our resources. We hired an attorney, a guy by the name of Bill Potter, who many of you know, and we said, "We've got to intervene on this case. We've got to support this." This is the first time any utility has come up and said, "Hey, we want to socialize some of these costs. We have an obligation to these customers to open it up."

We were through. We were granted, by the judge, intervention status. We participated in the case. But at the end of the day, and perhaps because of the ratepayer advocates' objections, we learned that the Board of

Public Utilities staff recommended that the issue not be included in the final stipulation of settlement, arguing that socializing grid modernization costs was a generic utility issue. It should be handled not on a one-off basis, but in terms of, all the utilities should come to the table.

So in the stipulation of settlement, which we agreed to, it suggested that Atlantic City Electric file a new petition; and that this new petition could be resolved at the Board with all parties at the table.

That was March of 2021. So we're here, more than a year later. There's no petition. We now have 50 circuits closed, and that's up from 38 two years ago. So the situation is getting worse, and we need to act.

Now, in fairness, I don't have to point out that both Jersey Central and PSE&G's territory are nowhere near as challenged as Atlantic City's. That's the result of the fact that PSE&G has a much denser geographic area. The low densities are a lot higher. And as a result of that, there's more forgiveness in the system. But clearly, they're headed in the same direction, because there are limits.

Now, in fairness, you're going to hear a number of stories today about the interminable utility delays, which are true. The fact that many of these upgrades are astronomical in cost, which is true. But I think we also have to reflect for a minute on a corollary issue about renewable energy and its impact on utility earnings.

When a utility loses a customer, they lose throughput, they lose sales, they lose revenue. That loss in revenue results in a lower margin for their shareholders. It results in less expense money to repair the system and to hire people to do that. And, very clearly, it's not in their best economic interest. They're dying a death of a thousand cuts. And here we are, as an

industry, saying, "Hurry up, hire more people. Let's accelerate your bankruptcy." I mean, maybe I'm exaggerating with bankruptcy, but it's making things very difficult for them. And clearly, if we're going to get to the point where we're really going to get 750 megawatts of renewable energy every year, we're going to have to deal with the utility issue. We're going to have to deal with the construct, the economic construct of how these folks make money. It's called *decoupling;* it's where revenue and sales are decoupled so that we don't end up in a situation where they're incented by sales, and they really take a beating if they lose money.

Now, I would also point out, then, the Clean Energy Act of 2018, where we get into energy efficiency. They were taken care of; they made an investment in energy efficiency, they were allowed to earn a return. If they lost money because of energy efficiency, they were allowed to recover those lost revenues. So we essentially decoupled energy efficiency, and we did nothing for solar. Zero.

You have to re-think that policy. I clearly think that we're not going to get to where we want to go if we don't do that.

Now, quickly, there are three levels of interconnection. Level 1 studies are residential; cursory examinations. It's 8 to 10 kilowatts; it's not a big deal. They turn around in three days. We get 15,000 of these things -- up to 15,000 a year, and these things run a quick turnaround.

When you get into the Level 2 and Level 3 -- where we get into what the Senator talked about, in terms of grid solutions -- you're talking about significant analyses. They first charge you up to $30,000 dollars, and these studies can take many, many months -- and do, because they're complicated. They have to do load flow studies, they have to look at

overloads, they have to look at a lot of things, because these are big projects coming on their circuits.

But under the mechanism right now, there is no funding available to reopen circuits; zero. Right now, at the end of the time when they do the study, they make a very detailed estimate of all the equipment that is needed for upgrade. Whatever that number is, it debt served on the developer, and the developer has to pay it immediately. If the developer doesn't pay it, they don't act. Once it is paid, then the developer knows his cost and can begin to commence construction on the project. But up to that point, nothing can occur.

Now, when we talk about the practical solutions of this Bill, I think we have to look at the fact that this is an opportunity to really create a fund that would be very substantial, on the backs of the development community. And they're not doing this necessarily because they want to provide funding; they're doing this because, if they don't do it, they don't have any place to sell. This is going to grind to a halt. In Atlantic City Electric territory right now, as you can see from the maps, there's not a lot of places to go to sell solar. And if you don't have a place to go, you're not in business.

So this Bill offers -- and I think appropriately -- a cost-sharing mechanism. It says, let the developers pay some money; let the utility ratepayers pay a share, in an equitable way, so that there's a balance; and let's move forward to modernizing the grid. We have to do this, and we have to start now.

But let's talk about the amount of money. The Bill suggests up to $50 a kilowatt for a residential home. That means the developer would

send a check for up to $500 to the utility for each home, 15,000 homes a year. That's $7.5 million. Now, I'm not suggesting it has to be $50. Maybe in Atlantic City Electric territory, it is because that's where they need the upgrades the most. But we would assume that in PSE&G and Jersey Central, it might be $20, $30, even $10 a kilowatt.

So when you do that, though, you recognize that you could be generating up to $7.5 million just from the residential community. As you get to larger projects where there's a lot more that's required to be done, here you're talking-- Let's pick a number; let's say it's $100 a kilowatt instead of $50, up to. Multiply that by the residual 600 megawatts of solar on a 750 desired scale. That's $60 million. Sixty plus $7.5 million -- $67.5 million a year that the development community, up to, could put on the table and say, "Let's modernize the grid. Let's pay for interconnections with this."

What this Bill does is, it then says, "Okay, utilities. Let's socialize the rest of the cost in a rough justice way." It doesn't mean that any individual project is not going to have some number that it knows what it's supposed to be -- it's going to be a fixed cost. If you're developing something in the 50-kilowatt range, the Board of Public Utilities is going to say, "Here's what your fees are." They'll know what it is, they don't have to wait, there's no study period or anything else. Because they know that whatever is not paid for by the developer is simply going to be kicked in with residual costs of the rate base. And of course, the utilities will learn on the rate base, just like they do with the Energy Efficiency Program.

So we think that this is a very good way to balance costs, to get moving on moving this grid forward. We spent hundreds -- not hundreds; we spent billions of dollars after Superstorm Sandy making the grid much

more hardened. And it helped us all. I mean, I can't complain about that; that was money well spent. We didn't have a lot of outages. But remember, those are billions of dollars that were spent on treating the symptoms of climate change. We're here now to say, "Let's go after the cause," which is, "Let's make the grid the system of highways." It's no longer a system of arteries where the heart pumps linearly to peak circuits. We need an integrated system, a modern grid, where you can get on with power at any location, and they can go freely in the most efficient way the server will load. That's where we have to get to. If we don't start getting on that road right now, I can tell you that the industry is going to start to really close down. We have to make this -- make the decisions on these costs.

I would finally argue one important thing. You're now meeting with the Board of Public Utilities. We're working with the stakeholder groups. And this is a highly charged technical evaluation. I mean, you need to have an electrical engineering degree really to enter into these discussions. We're talking about reverse currents, we're talking about Vars, we're talking about all sorts of things. Let the technical piece reside there. They're working on the technical. The I-REC things are important. I mean, there's a free application process in here which I think is very, very important. Because what it says is, instead of paying $30,000, pay the utility $1,000 and have their engineers look at the wall map and say, "You're six miles from the substation; you're putting in 3 megawatts. And you expect not to build an express circuit at $1 million a mile back to the substation?"

Immediately you can wash out projects that don't deserve to take a lot of time to study. And that's also in the Bill. If a project comes in and the cost is way too high, the Board can say, "Developer, plus what the

responsibility to the ratepayers is, is still far too -- this project is far beyond those bounds." So it's a short circuit or a circuit breaker that says, "If the cost gets too high, that project just gets kicked aside. This is only for low-hanging fruit. Let's get the best projects done quickly."

So my argument would be, let's keep the technical stuff away. This is about funding. Because if you create the funding, it's like if you build it, they will come. And I think this provides an equitable way for the utilities to get paid, to earn a return, finally getting through some of these issues of decoupling. And it's a way for the development community to put an equitable share in. It's a very, very important Bill--

SENATOR SMITH: So two questions.

MR. DeSANTI: Sure.

SENATOR SMITH: Number one, if they'll pass, how do we know the money goes for the purpose intended?

MR. DeSANTI: Well, you have the Board of Public Utilities that would have oversight, through rules and regulations, that this money be put into a segregated fund, and it be used and drawn down for interconnection and for grid modernization purposes. There would be a system of rules and regulations that would have to flow from this.

SENATOR SMITH: What impact on ratepayers?

MR. DeSANTI: Well, it's up to the Board of Public Utilities.

SENATOR SMITH: Not a good enough answer.

MR. DeSANTI: Not a good enough answer.

All right, let's say, for sake of argument, matching. Let's say the utility matches what the development community puts in. In a given year,

we said up to $67 million; $67 million for all ratepayers. If we come up with $30 million, $30 million for all ratepayers.

SENATOR SMITH: Yes, what is that spread over the--

MR. DeSANTI: Thirty million dollars over all the customers in the state-- Wow; I'd be guessing.

Lyle, any idea?

MR. RAWLINGS (off mic): I'll get back to you in a second. (laughter)

MR. DeSANTI: Let's wait for him.

SENATOR SMITH: All right; he's a witness. We'll get it from him when he gets up.

MR. DeSANTI: He's a witness.

It's equitable; it has to be fairly shared. We've got to modernize the grid. The grid is 100 years old. It was designed for a completely different purpose. We need a system of highways; we need a system of byways. This has to be an equal access where you can put power in any place and take it out any place. The only way to get there is to fund it, and let's leave the technical issues to the technicians.

SENATOR SMITH: Got it.

MR. DeSANTI: Thank you, sir.

SENATOR SMITH: Any questions for Fred? (no response)

All right.

MR. DeSANTI: I appreciate it.

SENATOR SMITH: Thank you, Mr. DeSanti; most appreciated.

MR. DeSANTI: Thank you.

SENATOR SMITH: Josh Lewin, Helios Solar Energy, LLC, in favor.

J O S H L E W I N: Hello; this is Josh Lewin, Helios Solar Energy.

Thank you, everyone on the Committee; and thank you, Senator, for doing everything that you're doing for our industry and things over the years.

The reason why I'm here is we have a -- we've experienced a lot of circuit closures in the Atlantic City area. These aren't small projects; they're commercial projects, ranging from 120 kW to a megawatt. And they're hurting three specific customers that we have. One has a big data center that they're trying to put in, in the Millville area, which is a low economic area that the Governor wants to go after. Another is a furniture store that he runs on tight margins. He's changing everything to EV electric vehicles, heat pumps, and things like that. And he finds solar is very helpful for him and his stores and distribution centers. Another is a big union contractor down there that wants to change their entire fleets to EVs, and E storage, and things like that. And again, Atlantic City Electric has denied us again and again.

We've tried multiple different ways to overcome these issues. We've talked about battery storage and other options with them, and everything, unfortunately, fell through.

So we greatly appreciate what you all are trying to accomplish here today. And we look forward to helping with this help, because what we see, as a business owner and things, is basically slow suffocation of our business. And we've been doing this for 15 years now. Not that others here haven't been doing this much longer, and I'm grateful for everyone who has

come before us and things. But I don't see how we're going to be able to meet and (indiscernible) the state's needs from an energy perspective, but also from an employment perspective if the grid continues to slowly close in major areas.

Thank you.

SENATOR SMITH: Thank you, Josh.

Ila Gillenwater from MSSIA and CED Greentech, in favor.

I L A G I L E N W A T E R: Thank you; good afternoon.

Yes, I work for CED Greentech. I'm also on the Board of MSSIA. CED Greentech is a solar equipment distributor. And so my clients are the developers of commercial, municipal, and residential; people who are selling and installing solar across our great state.

You know, New Jersey's been committed to renewables with an aggressive stance for a long time, with an aggressive energy plan. And as a result, we have a huge industry here, employing over 7,000 people. And what's happening is, those solar developers are seeing a harder and harder time getting projects done.

I thought it might be helpful for the Committee to hear a few examples of those types of projects. So I reached out to my base, and they sent information on projects that were thwarted over the last few years. And it's interesting; they're across all the different utilities, and they're also across different types of projects. So while, yes, ACE is one that is primarily on the list, PSE&G is there, as is JCP&L. They're residential projects; they're municipal school projects, which I think is a big concern -- municipal schools; and PSE&G in Newark and Washington Township. There are municipal schools in Gloucester County; there are projects in Upper Township, which

is ACE. JCP&L has projects that have been denied for Community Solar. They were a dual-use between Community Solar and commercial usage.

There are also some very large projects in ACE, like a 1.2-megawatt commercial project, where the developers often find that the utilities take months, 12 to 24 months, to get back to them. And by the time that comes back, they're asking for $700,000 worth of work. And it makes the project undoable and not able to move forward.

So one of the things that has come up over again -- I mentioned it earlier that I'm in the solar equipment arena. And the solar equipment has the capability to make it so that the power does not have to be fed back to the grid. And that's been a complaint from the utilities -- is that their concern is that feedback to the grid. Well, their technology is there to cut it off, and they seem to ignore that fact. That's what the developers are telling me.

So as Mr. Lewin pointed out, what's happening is there are less and less projects being able to move forward. And it's really hurting the jobs in our state. As I mentioned, 7,000 people are employed in our industry. And as the jobs are not being able to be fulfilled, those jobs aren't getting built. And so their unemployment is growing in our sector.

I'm happy to answer any questions if you have any.

Thank you.

SENATOR SMITH: Any questions? (no response)

Thank you very much for your testimony.

Doug O'Malley; oh, I'm sorry. Senator Durr.

SENATOR DURR: I'd like to hear from somebody who is against it.

SENATOR SMITH: There's only one slip against. Let's get the against.

Opposed is Melissa Sims, Ecological Systems LLC.

Ms. Sims, in opposition.

M E L I S A S I M S: Okay.

My name's Melissa Sims. I own a solar company; it's a family-owned and run business called Ecological Systems. We're in Monmouth County, but we work all over New Jersey.

I should say I support the idea, in general, that we need to modernize the grid, of course. However, this Bill needs amendments; it needs work. So I can't say I'm 100 percent supportive of this Bill.

SENATOR SMITH: So what amendments would you like?

MS. SIMS: So-- Well, first, let me say a couple of things. Recently we've had projects specifically in Atlantic City Electric territory. They're smaller projects; like I said, we are a residential and small commercial. So we have one residential and one small commercial that we can't get through in Atlantic City Electric territory. So that's a huge -- that's a huge problem. If my company is having this problem, this is widespread across everyone.

But there are solutions that we have in the ground right now to help modernize the grid. We talked about low-hanging fruit often in this industry -- what the utility companies can do right now that is not that-- Like Ila just said, there are solutions that we have right now which are-- We have frequency modulation or reversing power at substations. And, of course, battery storage. These are all solutions that can help us open the closed circuits.

One issue I have is the -- with the I-RECs standards. I don't believe we should be adopting I-RECs standards. I don't think they're-- We already have an interconnection procedure. I don't think we need to revisit that. We already have that procedure in place.

SENATOR SMITH: What is it in the I-RECs standards that you disagree with?

MS. SIMS: Well, I just -- I don't know why we need-- We already have a procedure--

SENATOR SMITH: So it's theoretical. Every other witness said that these interconnections are a nightmare. So we're trying to make it a little bit faster, a little bit more efficient.

MS. SIMS: Well, we already have the procedure. It's just that the grid modernization is the issue. So I think they're two separate things.

SENATOR SMITH: Okay.

SENATOR DURR: So you're saying that the procedures would work if the grid was modern.

MS. SIMS: Yes.

So it should be the public utilities' job to make the grid solar-ready. It's beneficial to everyone in New Jersey.

There are already tremendous fees being collected on every utility bill. I am concerned that if we-- We have this fund; we need to make sure we know exactly where it's going, exactly how it's being used.

I also take issue with the Level 1 interconnection, which is 10 kW and under, which is usually for a residence. It doesn't have to be for residences, but it usually is. So those systems are already at the point of

use. I don't know why we're adding an extra fee to that. The system is already there, so I don't know why we would charge another fee for that.

So instead of public utilities-- We really need to be working smarter with the solutions we already have in place. I, 100 percent, agree that we have a huge grid infrastructure problem. We need to modernize it, but we also need to reach for the low-hanging fruit that we already have in place to modernize that. And that needs to be brought up, and that needs to be recognized, and we need to call attention to it.

So thank you.

SENATOR SMITH: We appreciate your comments.

SENATOR DURR: Thank you.

SENATOR SMITH: Next, Doug O'Malley, Environment New Jersey, in favor.

MR. O'MALLEY: In favor.

Doug O'Malley, Environment New Jersey.

We support this Bill because -- for the simple reason that without a working electric grid, the Wizard of Menlo Park would just be an experimenter, right? And that's, I think, the critical thing to remind ourselves -- is that we have an electric grid that does not work for Clean Energy projects in a vast amount of the state. And I'm deeply appreciative for Fred DeSanti's testimony and the map he provided to members of the Committee; and also the work of Atlantic City Electric. They recognize that this is an issue; they want to fix this.

And I also want to note, this isn't just Atlantic City Electric, this isn't just South Jersey. This is also increasingly in service areas in JCP&L's service territory as well.

So we obviously need a statewide solution. Because right now we're seeing a -- essentially, a *de facto* solar moratorium in place for certain parts of the state. I'd also want to emphasize the critical nature of offshore wind, and the fact that the BPU is working with PJM on a process on how we're going to accommodate a massive influx of literally thousands of megawatts of offshore wind onto the electric grid. We can't do that with a 19th-century grid or 20th-century grid. We need to make those investments. And as we heard, there would be basically -- developers would be chipping in as well as utilities. There was a question on, kind of, what the cost ultimately will be.

SENATOR SMITH: Yes.

MR. O'MALLEY: And I believe Lyle Rawlings will testify to that a little later. But the cost is not significant, in the sense that it's -- all costs are significant, but it's 0.004 cents. All costs are significant but, in this case, this is not just a question of what the cost is. It's a question of, can the cost ultimately save us by getting more clean energy onto the grid -- which, as the Chairman noted, will actually reduce energy load in the highest demand times, right? So this is ultimately-- We don't want to strangle clean energy projects before they can get onto the grid, and that's what we're seeing right now.

Thank you, Mr. Chairman.

SENATOR SMITH: Thank you, Doug.

Andy Wall, from Ad Energy, in favor.

A N D Y W A L L: Hi. Thanks for the opportunity to testify.

My name is Andy Wall. I run a residential installation company here in New Jersey, based down in West Berlin, New Jersey.

And I am in favor of the Bill.

What I wanted to communicate here was-- I think, for obvious reasons, if we want to put up a lot of solar in the state, we have to have a place to put it. So I think it's pretty obvious that something is needed to be done, given the feeder closures that you've seen.

I wanted to talk about a kind of second-order effect, a deleterious second-order effect that the closed feeders cause.

So in residential solar, which is what we focus on, it is more expensive than larger-scale solar that you might do. What is perhaps less well understood is that, while there are some diseconomies of scale that create that extra cost, most of that cost is from marketing costs. It's kind of getting the word out. We're still knocking on doors; we're still pounding the phones -- that sort of thing.

And so what we're trying to do, I think it's fair to say, is transition this market from kind of the early adopters to when it's mainstream. The cheapest customer who we acquire is the customer who has a neighbor who already went solar and calls our office. You know, that costs next to nothing.

Now, closed feeders almost surgically target, or prevent, that from happening because these closed feeders are geographically clustered. Neighbors live on the same feeder. So what ends up happening is, that transition from early adopter to mainstream gets stifled just as it's building up some momentum. And that means that solar for the state -- at least in our corner of the market, in residential -- ends up costing work because we have to go out and knock on more doors in new areas to find them.

That's all I wanted to say. Thanks.

SENATOR SMITH: Thank you, Andy.

The next witness is Baoli Wang from U.S. Clean Energy, in favor.

B A O L I W A N G, Ph.D.: Yes, I'm in favor of the Bill.

I had a very bad experience with Atlantic City Electric connection.

And in April of last year, I started a NET meter application. They spent almost six months reviewing the design, back-and-forth, and then said the design passed the review. And then later they said that they need to continue to study the grid, and that we need to pay $10,000, and that they need three to four more months to finish the review.

And a full month later, they said the grid needs about a $160,000 upgrade. And it also needs--

SENATOR SMITH: Wow; and that's to do-- How big a solar system were you--

DR. WANG: It's a 1.2 mega DC and 800 AC. They need $160,000 to upgrade--

SENATOR SMITH: No, no, no. I'm asking about the upgrade. What is it you were trying to service with solar energy? Was it your house, was it a business?

DR. WANG: This is a commercial warehouse.

SENATOR SMITH: Okay.

DR. WANG: Another to handle the $44,000 to upgrade telecommunications using fiber optics. So basically, it killed the project.

SENATOR SMITH: Okay.

Anything else?

DR. WANG: Yes; also another experience we had-- The Township permitted the project, right? They asked permitting fees of $51,000 for the connection. No, for the Township permit fee approval to install. But for comparison, I have some other similar commercial project that is only a few thousand dollars. What they're charging, they are trying to base on the (indiscernible) kW chart permitting fee, and that's electrical -- or at least $35,000; than the other fees on top of that is $51,000. It's too much.

SENATOR SMITH: Absolutely.

Thank you very much for your comments.

DR. WANG: Thank you.

SENATOR SMITH: Lyle Rawlings, MSSIA.

MR. RAWLINGS: Thank you, Mr. Chairman.

If you'll permit me, I'd like to give you a handout.

SENATOR SMITH: Sure.

SENATOR DURR: Did you get that number that Fred was asking about?

MR. RAWLINGS: I did, and I actually told it to Doug O'Malley incorrectly, unfortunately. So I'd like to correct it.

The number -- when you spread $30 million over all of the state's power -- is 0.04 cents per kilowatt-hour. And that's still pretty tiny. It's an extremely small fraction of people's bills.

So this issue has been identified by the Mid-Atlantic Solar and Storage Industries Association's Board as the number one issue that we need to address this year. It's highly urgent, and our members are desperate. The

kinds of stories that you heard before -- and you're hearing from several other MSSIA members today, including me, and four members of our Board are here to speak today, which speaks to the urgency. Our members are all telling us that they are getting shut down by numerous projects. Many members are saying they're abandoning Atlantic City Electric territory all together; many, many members doing that.

I don't know if you've seen the sheet yet; has that gone around? Yes?

SENATOR SMITH: Yes.

MR. RAWLINGS: So the first page of that was already spoken about eloquently by Fred DeSanti; Atlantic City Electric territory. It's already become legendary. It's been shutting down for many, many years already. And when you look at the screenshot -- that's your first page -- of Atlantic City Electric's web page that shows hosting capacity, and you see these large black areas -- much larger areas now than before -- completely shut down. You see these large red areas where it's severely, severely restricted. It's been bad for several years, and it's getting a lot worse.

But even more concerningly, if you look at the second page -- that was back in February of 2020 when I made a presentation at a stakeholder meeting at the BPU about the infrastructure crisis that we identified at the time. And that's a zoomed-in view of the only really bad areas in JCP&L at the time. And you can see two red blobs; those are severely restricted to under 50 kilowatts. Those red blobs were what I zoomed in on as the worst areas in JCP&L territory. There were only two, relatively small areas, and it was making the point that there are some problems

coming. Here are two scary red blobs, but the rest of JCP&L territory, at the time, was coded green, which is relatively open; or yellow, slightly restricted.

On the next page, what you can see is a zoomed-out view of a portion of JCP&L territory, where it's turned all red. And that's in February of 2022, when these slides were presented at another stakeholder meeting out of the BPU. So in just two years, we went, in JCP&L, from just two small red blobs to a situation in which literally all of JCP&L territory is mostly red, with only a little bit of green and yellow. In other words, it flipped just in the course of two years.

Now, the last page is a depiction of a certain area within PSE&G territory. PSE&G is in much better shape. But you can see there is a large area of red between Springfield, New Jersey, and Bristol, PA, that has turned red. So it's coming on like a freight train in PSE&G; it's already here, pretty bad, in JCP&L; and Atlantic City Electric -- not to put too fine a point on it -- it's closing down the solar.

So it's also important to note the self-accelerating nature of this problem. If you're trying to fit the same amount of solar every year into a shrinking geography, then you've got the same amount going into less area. That's going to accelerate this process. If, per the Energy Master Plan, you want to accelerate the amount of solar you're doing every year, it's double acceleration. You're doing more, and more, and more, in less and less territory every year.

So we expect this to be a hockey stick-shaped curve, where the pace of the problem is going to self accelerate. And we believe that right now we're on the up-facing curve of that, of that hockey stick-shaped problem. So the urgency is extremely high in our membership.

Now, this is an extremely important Bill. The part about socializing a portion of the cost of upgrading the system is necessary for a couple of different reasons. One is, the situation we've had in the past is a little ludicrous. You can have a circuit that's completely open at the beginning. You start to do a few solar projects on that circuit, maybe 5, 10, 20, 30 projects, and then just the last one in has to pay for upgrades for the whole circuit after a large number of projects got a free ride. It's like a game of musical chairs. The last one in pays the entire freight. That can't continue; it's illogical. Furthermore, the types of measures we're going to need in the very near future, and really now, are system-wide upgrades. And you can't do that project by project, and say to one project, "You've got to pay for system-wide upgrades." That just won't work at all.

So we need a comprehensive statewide solution, and that's why, as Fred noted, we have to start to socialize these costs so that we can do these system-wide upgrades that are needed.

We need a modern grid that's ready for renewables; so a renewable-ready grid. We don't have that, and we need a comprehensive solution that will get us there.

Now, this socializing sharing formula that Fred has proposed isn't what we would prefer. We think the societal utility compact that's been in place for 100 years is, utilities do what's necessary to make the grid ready for what society wants. So we think it should be fully socialized. But we recognize that, because of the concerns on the other side of the consumer protection entities in this state, we need a compromise. So we're supportive of that.

I think probably the most important thing we want to say today is that this lays the framework for how we move forward into a modern future that can really support the transition to renewable energy -- that we want by 2030, and that we want by 2050 -- 100 percent. But we have an urgent problem now. We are shutting down this industry, and businesses are leaving the state entirely because they don't see a future. They're leaving large portions of this. We need some urgent measures that can be done now. And there is low-hanging fruit. MSSIA has identified at least four really easy, low-cost to no-cost measures that can open up these circuits again. That's what we need -- is we need to start reopening these circuits to solar development.

Now, this is new policy not contained in this Bill. Perhaps this needs to be in a separate bill, but this needs to happen. We've got to capture this low-hanging fruit; these four simple ideas that are a recipe to reopen these circuits now, and we have to do that urgently. We can't just study the problem for the next couple of years.

SENATOR SMITH: So Lyle, the four low-hanging fruit -- have you forwarded something to us on that?

MR. RAWLINGS: We have not yet; we are ready to do so.

SENATOR SMITH: Well, so one question about the Bill--

MR. RAWLINGS: Yes.

SENATOR SMITH: --is, maybe we should set them up as priorities. But we can't unless we know what they are.

MR. RAWLINGS: Of course, yes. And we do intend to send those to you. They're very simple and easy to express. And a lot of it is the standards we have in place. Not the procedural standards, as Melissa was saying; the procedural standards right now are not that bad. They do

work. It's the grid itself, and how we look at the grid, how utilities look at the grid that's not working.

So the limitations need to be done away with. Those limitations -- I represented the solar industry when interconnect standards were first introduced way back in the year 2000. It was a different world. We had a few tiny residential solar systems at that point. Now we have thousands of megawatts of solar. So those antiquated standards from the year 2000 don't work anymore. So we have to throw out the limitations that say only a small percentage of the throughput of a substation can be allowed on.

Any place in the world that does large amounts of solar will put enough solar on a substation to reverse flow through that substation. And that currently is not allowed in New Jersey. We will not get there without allowing reverse flow through substations. That's one of the four.

SENATOR SMITH: Now you're getting into the technical that Fred said, "Let somebody else think about it."

MR. RAWLINGS: Well, you could say that.

SENATOR SMITH: But I'd like to see what the four low-hanging fruit are, and we'll take a look at it.

MR. RAWLINGS: Yes, and that's one of them, yes.

And it is technical, but it's common-sense stuff that we need to do urgently.

SENATOR SMITH: Good.

MR. RAWLINGS: Thank you.

SENATOR SMITH: Kyle Wallace, Sunrun, in favor.

Mr. Wallace.

K Y L E W A L L A C E: Thank you, Chairman, members of the Committee.

My name is Kyle Wallace. I'm the Director of Public Policy for Sunrun, the nation's largest residential solar and storage installer in the country. We have over 690,000 customers, including over 40,000 in New Jersey, with over 600 New Jersey employees across the state.

We are in strong support of Senate Bill 431. This is an incredibly necessary Bill to modernize the grid, and the interconnection standards and technical requirements. We believe the IRF model standards is a really good template to start from. It handles the whole host of issues that are currently not included in New Jersey's interconnection standards, such as non-export systems, and helping deal with how you deal with batteries and some of the newer technical standards that didn't exist at the time when New Jersey established their current rules.

The real core of it is, it's clear that closed circuits, in our view, from a residential perspective -- I can't tell you how frustrating it is that we have customers who have been calling for years, trying to get solar on their home, and they have been unable to do so because of these closed circuits. I mean, these have been an issue since at least 2016, and they've been growing, and it's a real problem.

If you look at the data from the New Jersey Clean Energy Program, residential installations in ACE are down 60 percent from 2016; and that's been accelerating. And that's just truly a fairness and access issue -- that these customers are paying into these programs, they deserve the right to be able to interconnect a system to the grid, just like their neighbors; just

like the folks in northern New Jersey where this is less of an issue, but a growing possibility that an issue will be right around the corner.

The Energy Master Plan even cites this as a specific issue that could grind renewable development to a halt. We were really glad to see that, but here we are, a couple of years later, and still nothing has been done about it. We really need to act, because, as Lyle mentioned, we really do see this accelerating across the state. And while it is primarily ACE right now, it's going to spread.

SENATOR SMITH: And by the way, I forgot to mention it when Lyle was here, but most of our witnesses are talking about this Bill from an industry perspective. But there's another perspective to this as well. We've invested somewhat in making our grid more sustainable in the event of weather events, etc. But the same kinds of things that we're doing here to strengthen the grid, or modernize the grid, would help to stabilize it in the event of those weather events, correct?

MR. WALLACE: Yes, it could. That's if you have holistic planning for the grid, and you're using these upgrades, and doing it strategically to make sure you're putting in the right equipment. Absolutely.

SENATOR SMITH: Thank you.

MR. WALLACE: And just as a hypothetical, just to show the importance of this -- this grid modernization fee structure. If you had this fee in place in 2016 for those ACE customers when they were still at, kind of, the peak of the residential installations, you'd be bringing in over $3 million a year, in 2016, 2017, 2018, to help fund these upgrades, which would have prevented these circuits from being closed in the first place. And when you consider the cost was only $10 million to reopen all of these areas

in the last rate case, that would have been covered in just a matter of years under these fees. And so it really shows that this can be a really significant driver of ensuring that there doesn't need to be as much rate basing as maybe some may believe there will be. I think that these fees can do a significant amount of that.

SENATOR SMITH: By the way, you make an interesting point. Maybe one of the things we should consider here is a sunset provision when the grid is modernized, or a reduction when the grid is modernized.

And by the way, I'd love to have some--

SENATOR DURR: How about not at all?

SENATOR SMITH: Yes, but it's a possibility.

You know, when we accomplish the purpose, that may not be the worst way to do it. Also, it probably makes it a little more salable to our constituents. And I think they realize that you have to have a grid-- By the way, next time Ida comes here, you're going to have people knocking on our doors big time.

But part of the selling point to this is that we're going to have a strengthened grid. And if we have a sunset so that the fees just don't continue on forever, or they get reduced, or whatever -- once the BPU has made that determination -- that might be something we should consider.

MR. WALLACE: And that's where I believe the Bill has a three-year cycle that the BPU would review these fees and make the changes. And the way that I envision it -- granted, I don't know if the BPU would fully agree -- I do see these fees being a utility-specific fee based on the actual upgrade needs. And that they would change over time. They'd go up when

you have those upgrades, and then they might go down if you can have a five-year period where you have fewer upgrades that are needed.

So we really do think it's a dynamic mechanism that can really help ensure that every customer has a right to interconnect.

As a solar developer, we never love an additional fee. That's never something we're happy about. But if the exchange is always being able to have our customers interconnect, we view that as a worthwhile trade-off.

And also on the kind of ratepayer cost perspective-- I think that that is a little bit misplaced in that, if these parts of the grid are so limited in their capabilities that one more residential solar PV system -- it can't handle that, how is it going to handle all the electric vehicles and the heat pumps? These upgrades are going to have to happen. It's not a matter of *if,* it's *when.* And if you don't have the solar developers paying in and covering some of those costs, who is going to bear those costs? It's going to be 100 percent ratepayers. So in my view, this is a way that helps reduce the overall ratepayer impact over time, unless you believe that no upgrades will actually be necessary. And I don't know that anyone would really think that that's realistic.

SENATOR SMITH: Very interesting point; thank you.

MR. WALLACE: So yes, we're very supportive. This still differs from the BPU, and I think that it complements the work they're doing in the interconnection proceeding. If they are able to embrace smart inverter technology, energy storage, limited or non-export interconnections, I think we can reduce the need for upgrades through those technical changes, while also providing more stable funding for those upgrades when they are necessary.

So I think they go hand-in-hand. This is a policy issue; it's not a technical one. It's how we want to pay for these upgrades. And so I believe this Bill is the right vehicle.

I appreciate it.

SENATOR SMITH: Thank you, Mr. Wallace.

Any questions for Mr. Wallace?

SENATOR DURR: I just feel adamant against-- These are private businesses, right?

SENATOR SMITH: Yes, but the grid's not private. And if we don't have it solved--

SENATOR DURR: It's like a pizza shop charging me for a pizza and asking me to provide the oven for it.

SENATOR SMITH: I don't see it that way, Ed. We may differ--

SENATOR DURR: I agree; the upgrades need to be made. But taxpayers shouldn't have to pay for the upgrades. They're already paying for the electric.

SENATOR SMITH: Yes, but if the electric can't get to them, that's the problem they have. I mean, I see all these ancillary benefits. Yes, it's good for the solar industry; yes, it's good for EVs; yes, it's good for whatever the purpose may be. But at the end of the day, if we don't have a grid that works, we're in trouble. And it's that much more vulnerable when these weather events come. So my biggest selling point here is, we have to finish the job on the grid, as well as I think of the ancillary benefits. And now you have somebody contributing to the cost. That's where I thought it was one of the winning comments.

But thank you, Mr. Wallace.

MR. WALLACE: Thank you.

SENATOR SMITH: Lauren Kahme, Ecogy Energy, in favor.

MS. KAHME: Thank you, Chairman, for the time.

I'll make it brief.

Yes, Ecogy Energy supports this Bill. Our only concern -- we share the concerns that Lyle expressed on behalf of MSSIA. But we're particularly concerned with the language in the Bill that does not define the fee that would be required above 10 kW.

We understand that this is -- you're giving deference to the BPU to set these fees. But as a developer, from a developer's perspective, if you're giving the authority of the language of the Bill to set the fee at $50 per kW for projects under -- like, 10 or under, we would urge the Committee to consider making similar authority of decisions with projects above that. It would just give more project certainty in our financial projections to know what that fee would be while we're developing in New Jersey.

So I thank you for your time. That was the main issue, but we also share the concerns that MSSIA displayed today.

Thank you.

SENATOR SMITH: Thank you for your comments.

Scott Elias, Solar Energy Industries Association, in favor.

MR. ELIAS: I guess it's good afternoon now. (laughter)

Scott Elias with the Solar Energy Industries Association.

I want to focus on a couple of things here. We already heard how inadequate interconnection policy has posed a threat to New Jersey's Clean Energy bills, and I want to help -- make that a little bit more tangible.

You can think about interconnection kind of like the rules of the road that carry energy from its origin to its final destination. And just like we need to often update our roads, we also need to make sure that interconnection policies evolve and keep pace so that these hypothetical roads and bridges are not broken, preventing energy from going from one destination to another.

I think the I-REC standards are about process; that is correct. And while I don't think this Bill adjudicates some of the technical details -- that's smart -- there are a number of things that are missing from the current processes. So for example, right now there's not something called a *pre-application report*. And that is something that's extremely important, in particular for the community solar industry. As the name would suggest, basically a developer would be able to apply; note their project location, the size. This would typically be for projects over 500 kilowatts. And for a modest fee the utility would be able to let them know a reasonable estimate of the interconnection viability. So a reasonable estimate of the cost upfront before either the developer or the utility goes further down the process. This saves time, this saves money. And if a project is extremely cost-prohibitive, the developer is not going to continue to develop in that specific location. So, in particular, I want to highlight that.

There are also different, sort of, dispute mechanism resolutions contained within the I-REC models. And New Jersey does not have a current process that adequately handles when there are disputes over interconnection, such as whether or not the utility is adhering to the timelines or things of that nature. This pre-application report concept I mentioned is something that is a no-regrets approach in over 12 states. And again, I think

this is a huge improvement, particularly if we do want to see at least 150 megawatts of community solar each year.

We heard a little bit today about the current problem of closed circuits and how New Jersey unfairly allocates costs for grid modernization. And I want to just note that what this Bill does is, it really empowers the BPU and the utilities to come up with a better way to unlock areas of the grid that accommodate more distributed resources, like solar. If upgrades are required to accommodate additional solar on a circuit, it is, as Lyle mentioned, the unlucky project that triggers the upgrade, and they're the ones that have to pay for the full cost, even if the upgrade results in additional benefits to several subsequent interconnection customers and New Jersey's ratepayers at large.

The way I would think of it -- it's kind of like moving. Let's say you move to a new neighborhood; it's Trenton. And you decide you want to pay for Internet service. But if you stream that Netflix show, that is the tipping point that will break the network. You can either pay thousands of dollars to be able to watch the Netflix show, and be able to access the Internet to be able to do online shopping or whatever it is you want to do with the Internet; or you can't access the Internet at all. And if you pay for these upgrades, it's not just you who is going to be benefiting from it; you're also going to pay to make sure that the Internet speed for all of your neighbors -- and for anyone else who moves to Trenton after that -- is able to have faster Internet and doesn't have the same sort of predicament.

Obviously, it's unfair if you are the first mover. If you're Company *A* and you're paying 100 percent for Company *B, C, D* and *E*, and that is the issue of the first mover, the *cost causer* -- whatever you want to call

it; there are a number of different names for it in the industry -- this Bill seeks to resolve that. It's not necessarily about making sure that ratepayers are paying for everything. It's about changing the paradigm that doesn't work, which makes it unfair for certain developers based on who gets there first.

And what this Bill is suggesting as an alternative model, is basically a model that has cost-sharing that equitably shares the cost of upgrading these infrastructure upgrades across multiple customers who benefit from them; and repairs at large. It's a multi-beneficiary cost approach -- similar to what Massachusetts is considering -- where a developer has contributions capped on a dollar-per-kilowatt-hour basis and the remaining costs are socialized among utility ratepayers. This will help bring much more clean energy online. And, put simply, this Bill is creating an innovative approach that distributes these costs across multiple projects. It enables proactive grid investments that are necessary for New Jersey's clean energy future, whether it's hardening the grid to prevent outages, whether it's reopening closed circuits that are closed, or whether it's just simply modernizing the grid.

So for all these reasons, SEIA is in support of this Bill. And I think a lot of the details that people want to discuss, those technical details, will be worked out through the BPU process that this Bill prescribes.

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

SENATOR SMITH: We appreciate your comments; they were very helpful.

Ben Graziano and Jeremy Conner; I think you guys got up before--

MR. GRAZIANO (off mic): We did.

SENATOR SMITH: -- but you're allowed to come back.

MR. GRAZIANO: Thank you.

SENATOR SMITH: And if you can briefly tell us what you'd like to see in the way of amendments.

MR. GRAZIANO: Absolutely.

As I said, this is -- I'm with Jeremy Connor from Novitium Energy; they are an NEP partner.

We have a few amendments we'd like to request.

First and foremost, if the Bill wants to have the desired impact that everyone spoke about, I think that it should have some accountability for the utilities. I'd like to see it where, if anything, if they fail to meet their obligation, there should be a penalty phase structured in there. And as Jeremy can go into a little bit more detail--

SENATOR SMITH: Penalty fees against the utilities?

MR. GRAZIANO: Yes, if they fail to do the upgrades in a timely manner or meet certain standards that the BPU has. There's simply no accountability now. And as they can tell you, a number of these companies have said they've paid for upgrades and are waiting; I mean, in some cases, over a year now, for anything to be done.

SENATOR SMITH: So why don't you send in some recommendations about what you think the penalties should be.

MR. GRAZIANO: We will. Joey and I have been in communication, so we'll get everything in writing; we will.

Secondly, a fee structure for commercial projects; someone else had mentioned it as well. We would support that so there's stability in the

marketplace. So for commercial producers, like Jeremy here, they would understand what those costs would be upfront.

And lastly, inclusion of other technologies, like battery storage; NetZero export, which we can go into a little bit more detail on. We think that should be included in the Massachusetts bill, as mentioned. That's in that legislation, that pending legislation, so we'd like to see that incorporated in this one as well.

SENATOR SMITH: So if you wouldn't mind, and even though the hour is late, can you, in three minutes, tell us about the NetZero suggestion?

J E R E M Y C O N N O R: Hi, this is Jeremy Connor from Novitium Energy. I'm a solar developer here in New Jersey. I've been here for 13-plus years.

So basically, what we're talking about right now is -- the big issue is, the grid or the utilities do not want power to go back to their infrastructure. They don't want us to export power to their infrastructure.

So we've actually done this in New Jersey; it actually has happened. It's been in operation for two-plus years. It's a commercial school district, so it's a big user with the utility here in New Jersey. So basically, we have a control system that will basically not allow the energy to be exported to the utility. It basically shuts down the inverters, or shuts the system down, or ramps the inverters down so they'll produce less energy.

SENATOR SMITH: Right. So I think what members need to know is, why would the utility be concerned. And the answer is, they're afraid that might destabilize the grid and cause a blackout.

So what the gentleman is talking about is, if we're generating electricity, we can stop it from going into the grid.

MR. CONNOR: Correct.

SENATOR SMITH: Am I right?

MR. CONNOR: Or you have a user, as an example, a manufacturer, that we can only put 50 percent of the load on. There's not enough room on their roof or their parking lot, so they're never going to export because they just use so much energy. But even in that scenario, the utility will not allow them, because they're saying they don't want the chance that that may go back to their grid; even though this technology is proven, and we've done it in the State of New Jersey. It's been in operation for two years.

SENATOR SMITH: Has it been done in other states?

MR. CONNOR: It's been done in Hawaii; it's been done, I think, in Connecticut and Massachusetts; it's been all over the country.

MR. GRAZIANO: New York, I believe--

MR. CONNOR: So it's proven technology. This is not new technology that just happened a couple of months ago, or a year ago.

SENATOR SMITH: All right. And so my understanding, again, of why there would be a lot of resistance from utilities -- even though they're not agreeing to the connection because they think it's going to upset the stability of the grid -- but in effect, you're taking new markets from them. The utility always wants to have more customers that they can deliver electricity to. And this makes it much easier for a private developer to provide the electricity through renewables for a facility. But they have to

agree -- they can't destabilize the grid. The utilities would still not like it because you're taking new customers away from them.

Am I missing the point, or is that it?

MR. CONNOR: Correct.

I think the other opposition is that the utility feels that they've already approved other people in that area who we're going to export that power to the grid. And they were hoping that that building is going to take that power. Their argument is, if that building goes dark or is no longer there, they can't make that user use power. And that's another opposition to this scenario as well.

SENATOR SMITH: All right. So this Bill has enough controversy in its current form. So I think I'm going to introduce a separate Bill on the net export concept that you have, which this -- it deserves its day in the sun as well, no pun intended (laughter) -- so we can see what the benefit is for the State of New Jersey,

But this Bill, with the I-REC standards and the sharing costs, has enough controversy.

Well, we had some ideas today. Send in your cards and letters.

June 9 is our next meeting. I don't know if we're going to be ready, but we're going to take a look at these Bills and see what we can hopefully get into a final form, or a pretty good final form.

Did you have more you wanted to say?

MR. CONNOR: We had more, yes.

MR. GRAZIANO: We just--

MR. CONNOR: So I just wanted-- A lot of people brought up examples about projects taking a year or two years. I just wanted to give you

one example of a project that we're doing for a school district that needs the savings and needs the opportunity to use renewable energy.

We worked with Atlantic City Electric on a project for a school district. We started the interconnection process in October of 2019. It took four months to even hear feedback from them on how they were going to proceed with the utility interconnection, after numerous attempts to call them and try to find out what was going on.

They came back with a million-dollar upgrade to upgrade the infrastructure for this project; which, two months later, we received an invoice, and we paid the invoice in full. We paid $1 million for the upgrade.

We still have not even started that project as far as an upgrade. The project is completely built. The modules are on the ground. So we're almost at three years now, where the utility has not even started the project, and we've actually paid $1 million.

You know, one of the things that was mentioned is the idea of roughly $10 million dollars is a number that solar developers or people would pay towards these costs. I can tell you, our company in the State of New Jersey has paid over $5 million in upgrades, and we have not seen any relief whatsoever. And I'm sure the other gentlemen in this area have spent even more.

So I think the one thing to understand is, solar energy, for some of these commercial businesses, is no longer an option. They are being mandated by their publicly traded company to do solar. And even though the solar companies are going to leave this area because they can't do business here-- Because of the issue of being renewable is very important now for financial reasons and customers, we're going to see manufacturers and

organizations leave this area because they can do solar somewhere else, and they can do what they need to do to be renewable.

Thank you for your time.

SENATOR SMITH: Questions for the witness? (no response)

If not, this concludes this meeting of the most interesting Committee in the Legislature.

(MEETING CONCLUDED)