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THE GENERAL ASSEMBLY OF PENNSYLVANIA

SENATE BILL

No. 979 Session of 2022

INTRODUCED BY STREET, HUGHES, FONTANA, COSTA AND KANE, JANUARY 4, 2022

REFERRED TO CONSUMER PROTECTION AND PROFESSIONAL LICENSURE, JANUARY 4, 2022

AN ACT

Amending the act of November 30, 2004 (P.L.1672, No.213), entitled, "An act providing for the sale of electric energy generated from renewable and environmentally beneficial sources, for the acquisition of electric energy generated from renewable and environmentally beneficial sources by electric distribution and supply companies and for the powers and duties of the Pennsylvania Public Utility Commission," further providing for short title, for definitions and for alternative energy portfolio standards; providing for Zero Emissions Certificate Program and for decarbonization; and establishing the ZEC Fund.

The General Assembly of the Commonwealth of Pennsylvania hereby enacts as follows:

Section 1. Section 1 of the act of November 30, 2004 (P.L.1672, No.213), known as the Alternative Energy Portfolio Standards Act, is amended to read:

Section 1. Short title.

This act shall be known and may be cited as the [Alternative Energy Portfolio Standards] Energy Future Act.

Section 2. The definitions of "reporting period" and "Tier II alternative energy source" in section 2 of the act are amended and the section is amended by adding definitions to

read:

Section 2. Definitions.

The following words and phrases when used in this act shall have the meanings given to them in this section unless the context clearly indicates otherwise:

"Advanced nuclear." A nuclear fission or fusion reactor, including a prototype plant as defined in 10 CFR §§ 50.2 (relating to definitions) and 52.1 (relating to definitions), with significant improvements compared to commercial nuclear reactors under construction as of the effective date of this definition, including the following improvements:

(1) additional inherent safety features;

(2) significantly lower levelized cost of electricity;

(3) lower waste yields;

(4) greater fuel utilization;

(5) enhanced reliability;

(6) increased proliferation resistance;

(7) increased thermal efficiency; or

(8) ability to integrate into electric and nonelectric applications.

* * *

"Carbon capture, utilization and storage technology." Technology that has the principal purpose of capturing, reusing, storing, sequestering or using carbon dioxide emissions to prevent carbon dioxide from entering the atmosphere whether constructed integral or adjacent to a coal-fired or natural gas-fired generation facility.

"Carbon constrained coal facility." As follows:

(1) An electric generating facility located in this Commonwealth that uses primarily coal as a feedstock and that

emits no more than 650 pounds of carbon dioxide per megawatt hour of generated electricity averaged over one calendar year by 2026, no more than 214 pounds of carbon dioxide per megawatt hour of generated electricity averaged over one calendar year by 2031 and zero pounds of carbon dioxide per megawatt hour of generated electricity averaged over one calendar year by 2036.

(2) The power block of the carbon constrained coal facility shall not exceed allowable emission rates for sulfur dioxide, nitrogen oxides, carbon monoxide, methane, nitrous oxide, volatile organic compounds, particulates and mercury for a natural gas-fired combined-cycle facility the same size as and in the same location as the carbon constrained coal facility at the time the carbon constrained coal facility obtains an approved air permit.

(3) All coal used by a carbon constrained coal facility shall be located in this Commonwealth.

"Carbon constrained energy system." A facility or energy system that uses carbon capture, utilization and storage technology that produces carbon emissions at or below the requirement under this act to generate electricity and delivers the electricity it generates to the distribution system of an electric distribution company or to the transmission system operated by a regional transmission organization.

"Carbon constrained hydrogen facility." As follows:

(1) An electric generating facility located in this Commonwealth that uses primarily hydrogen as a feedstock and that emits no more than 650 pounds of carbon dioxide per megawatt hour of generated electricity averaged over one calendar year by 2026, no more than 214 pounds of carbon

dioxide per megawatt hour of generated electricity averaged over one calendar year by 2031 and zero pounds of carbon dioxide per megawatt hour of generated electricity averaged over one calendar year by 2036, including the carbon dioxide emissions from the generation of the utilized hydrogen.

(2) The power block of the carbon constrained hydrogen facility and generator of the utilized hydrogen shall not exceed allowable emission rates for sulfur dioxide, nitrogen oxides, carbon monoxide, methane, nitrous oxide, volatile organic compounds, particulates and mercury for a natural gas-fired combined-cycle facility the same size as and in the same location as the carbon constrained hydrogen facility at the time the carbon constrained hydrogen facility obtains an approved air permit.

(3) All hydrogen and associated feedstock used by a carbon constrained hydrogen facility shall be located in this Commonwealth.

"Carbon constrained natural gas facility." As follows:

(1) An electric generating facility located in this Commonwealth that uses primarily natural gas as a feedstock and that emits no more than 650 pounds of carbon dioxide per megawatt hour of generated electricity averaged over one calendar year by 2026, no more than 214 pounds of carbon dioxide per megawatt hour of generated electricity averaged over one calendar year by 2031 and zero pounds of carbon dioxide per megawatt hour of generated electricity averaged over one calendar year by 2036.

(2) The power block of the carbon constrained natural gas facility shall not exceed allowable emission rates for sulfur dioxide, nitrogen oxides, carbon monoxide, methane,

nitrous oxide, volatile organic compounds, particulates and mercury for a natural gas-fired combined-cycle facility the same size as and in the same location as the carbon constrained natural gas facility at the time the carbon constrained natural gas facility obtains an approved air permit.

(3) All natural gas used by a carbon constrained natural gas facility shall be located in this Commonwealth.

* * *

"Eligibility period." The period of time, measured in energy years, during which a selected nuclear power plant may receive zero emission certificates under section 3.1.

"Eligible nuclear power plant." A nuclear power plant eligible to participate in the ZEC program under section 3.1.

"Energy year." The 12-month period from June 1 through May 31, numbered according to the calendar year in which it ends.

* * *

"Nuclear power plant." An individual electric-generating unit utilizing nuclear fuel to produce electric power.

* * *

"Renewable energy." The following:

(1) Energy derived from sunlight, wind, falling water, biomass, sustainable or otherwise, waste, landfill gas, municipal solid waste, wave motion, tides and geothermal power. The term includes the proportion of the thermal or electric energy from a facility that results from the cofiring of biomass.

(2) The term does not include energy derived from coal, oil, natural gas or nuclear power.

(3) The term does not include energy waste heat from

fossil-fired facilities or electricity generated from pumped storage but includes run-of-river generation from a combined pumped-storage and run-of-river facility.

"Renewable energy storage system." A commercially available technology, including, but not limited to, an electrochemical, thermal and electromechanical technology, that is capable of absorbing and storing electrical energy for a period of time for use at a later time with all of the following characteristics:

(1) The system is colocated behind the meter with a Tier I alternative energy source or behind the point of interconnection of a Tier I alternative energy source.

(2) The system is owned or operated by any of the following:

(i) A customer-generator.

(ii) An electric generation supplier.

(iii) An electric distribution company.

(iv) A third party that is jointly owned by two or more entities specified under subparagraphs (i), (ii) and (iii).

(3) The system is able to demonstrate that the energy the system discharges at all hours in a given reporting year comes from the storage of electrical energy produced by the colocated Tier I alternative energy source.

"Reporting period[.]" or "reporting year." The 12-month period from June 1 through May 31. A reporting year shall be numbered according to the calendar year in which it begins and ends.

* * *

"Selected nuclear power plant." An eligible nuclear power plant located in this Commonwealth selected by the commission to

participate in the ZEC program under section 3.1.

* * *

"Tier II alternative energy source." Energy derived from:

(1) Waste coal.

(2) Distributed generation systems.

(3) Demand-side management.

(4) Large-scale hydropower.

(5) Municipal solid waste.

(6) Generation of electricity utilizing by-products of the pulping process and wood manufacturing process, including bark, wood chips, sawdust and lignin in spent pulping liquors.

[(7) Integrated combined coal gasification technology.]

"Tier III carbon constrained energy source." Energy derived from a Pennsylvania-sourced carbon constrained coal facility.

"Tier IV carbon constrained energy source." Energy derived from a Pennsylvania-sourced carbon constrained natural gas facility.

"Tier V carbon constrained energy source." Energy derived from Pennsylvania existing nuclear generation.

"Tier VI carbon constrained energy source." Energy derived from Pennsylvania advanced nuclear generation.

"Tier VII carbon constrained energy source." Energy derived from a Pennsylvania-sourced carbon constrained hydrogen facility.

* * *

Section 3. Section 3(b)(2) of the act is amended, subsection (b) is amended by adding a paragraph and the section is amended by adding subsections to read:

Section 3. Alternative energy portfolio standards.

* * *

(b) Tier I and solar photovoltaic shares.--

* * *

(1.1) Beginning in the 16th year after the effective date of this paragraph, the minimum percentage of electric energy required to be sold to retail electric customers from alternative energy sources shall increase by at least 1.4% each year so that at least 15% of the electric energy sold by an electric distribution company or electric generation supplier to retail electric customers in that certificated territory in the 20th year after the effective date of this paragraph is sold from Tier I alternative energy resources.

(2) The total percentage of the electric energy sold by an electric distribution company or electric generation supplier to retail electric customers in this Commonwealth that must be sold from solar photovoltaic technologies is:

(i) 0.0013% for June 1, 2006, through May 31, 2007.

(ii) 0.0030% for June 1, 2007, through May 31, 2008.

(iii) 0.0063% for June 1, 2008, through May 31, 2009.

(iv) 0.0120% for June 1, 2009, through May 31, 2010.

(v) 0.0203% for June 1, 2010, through May 31, 2011.

(vi) 0.0325% for June 1, 2011, through May 31, 2012.

(vii) 0.0510% for June 1, 2012, through May 31, 2013.

(viii) 0.0840% for June 1, 2013, through May 31, 2014.

(ix) 0.1440% for June 1, 2014, through May 31, 2015.

(x) 0.2500% for June 1, 2015, through May 31, 2016.

(xi) 0.2933% for June 1, 2016, through May 31, 2017.

(xii) 0.3400% for June 1, 2017, through May 31, 2018.

(xiii) 0.3900% for June 1, 2018, through May 31, 2019.

(xiv) 0.4433% for June 1, 2019, through May 31, 2020.

(xv) 0.5000% for June 1, 2020, [and thereafter.] through May 31, 2021.

(xvi) 0.7925% for June 1, 2021, through May 31, 2022.

(xvii) 1.2560% for June 1, 2022, through May 31, 2023.

(xviii) 1.9906% for June 1, 2023, through May 31, 2024.

(xix) 3.1584% for June 1, 2024, through May 31, 2025.

(xx) 5.0000% for June 1, 2025, through May 31, 2026, and thereafter.

* * *

(c.1) Tier III share.--Of the electrical energy required to be sold from carbon constrained energy sources identified in Tier III, the percentage that must be from these technologies is for:

(1) Energy years 2026 through 2030 - 2.5%.

(2) Energy years 2031 through 2035 - 5.0%.

(3) Energy years 2036 through 2048 - 7.5%.

(c.2) Tier IV share.--Of the electrical energy required to be sold from carbon constrained energy sources identified in Tier IV, the percentage that must be from these technologies is for:

(1) Energy years 2026 through 2030 - 2.5%.

(2) Energy years 2031 through 2035 - 5.0%.

(3) Energy years 2036 through 2048 - 7.5%.

(c.3) Tier VI share.--Of the electrical energy required to be sold from advanced nuclear sources identified in Tier VI, the percentage that must be from these technologies is for:

(1) Energy years 2026 through 2030 - 0.5%.

(2) Energy years 2031 through 2035 - 1.0%.

(3) Energy years 2036 through 2048 - 2.0%.

(c.4) Tier VII share.--Of the electrical energy required to be sold from carbon constrained hydrogen sources identified in Tier VII, the percentage that must be from these technologies is for:

(1) Energy years 2026 through 2030 - 0.5%.

(2) Energy years 2031 through 2035 - 1.0%.

(3) Energy years 2036 through 2048 - 2.0%.

* * *

Section 4. The act is amended by adding sections to read:

Section 3.1. Zero Emissions Certificate Program.

(a) Establishment.--Notwithstanding any other law to the contrary, the commission shall complete a proceeding no later than 180 days after the effective date of this section to allow for the commencement of a program providing for the issuance by the commission of a zero emission certificate. In this proceeding, the commission shall adopt, after notice, the opportunity for comment and public hearing, an order establishing the Zero Emissions Carbon Program for selected nuclear power plants which shall include, but not be limited to:

(1) A method and application process for determination of the eligibility and selection of nuclear power plants.

(2) Establishment of a mechanism for each electric distribution company to purchase ZECs from selected nuclear power plants and a mechanism for the commission to effectuate the provisions of subsection (i).

(b) ZEC program application.--The following shall apply:

(1) As part of an application submitted to the commission under subsection (c), a nuclear power plant seeking to participate in the ZEC program shall provide to the commission any financial information requested by the commission pertaining to the nuclear power plant, including, but not limited to, certified cost projections over the next three energy years, including operation and maintenance expenses, fuel expenses, including spent fuel expenses, nonfuel capital expenses, fully allocated overhead costs, the cost of operational risks and market risks that would be avoided by ceasing operations and any other information, financial or otherwise, to demonstrate that the nuclear power plant's fuel diversity, air quality and other environmental attributes are at risk of loss because the nuclear power plant is projected to not fully cover its costs and risks, or alternatively is projected to not fully cover its costs and risks, including its risk-adjusted cost of capital.

(2) An application submitted to the commission under subsection (c) shall include a certification that the nuclear power plant will cease operations within three years unless the nuclear power plant experiences a material financial change. The certification shall specify the necessary steps required to be completed to cease the nuclear power plant's operations.

(3) The financial and other information required under

this subsection may be submitted on a confidential basis and shall be treated and maintained as confidential by the commission and, notwithstanding any other law to the contrary, shall not be subject to public disclosure. The commission and the Attorney General shall jointly approve the disclosure of confidential information to a party that the commission and the Attorney General deem essential to aid the commission in making the determinations required under this subsection, provided that the party is not in a position that disclosure could harm competition and the party agrees in writing to maintain the confidentiality of the confidential information.

(4) As used in this subsection, the following words and phrases shall have the meanings given to them in this paragraph unless the context clearly indicates otherwise:

"Market risks." The term shall include, but not be limited to, the risk of a forced outage and the associated costs arising from contractual obligations and the risk that output from the nuclear power plant may not be able to be sold at projected levels.

"Operational risks." The term shall include, but not be limited to, the risk that operating costs will be higher than anticipated because of new regulatory mandates or equipment failures and the risk that per megawatt hour costs will be higher than anticipated because of a lower than expected capacity factor.

(c) Submission of application.--No later than 210 days after the effective date of this section, a nuclear power plant seeking to participate in the ZEC program shall submit its application to the commission.

(d) List.--Notwithstanding any other law to the contrary, the commission shall complete a proceeding no later than 330 days after the effective date of this section and shall adopt, after notice, the opportunity for comment and public hearing, an order establishing a rank-ordered list of the nuclear power plants eligible to be selected to receive ZECs, and establishing which eligible nuclear power plants have been selected to receive ZECs under this section. If the commission determines, in its discretion, that no nuclear plant that applies under this section satisfies the objectives of this section, then the commission shall be under no obligation to certify any nuclear power plant as an eligible nuclear power plant.

(e) Requirements.--To be certified by the commission as an eligible nuclear power plant, a nuclear power plant shall:

(1) Be licensed to operate by the United States Nuclear Regulatory Commission by the effective date of this section and through calendar year 2030 or later.

(2) Demonstrate to the satisfaction of the commission that the nuclear power plant makes a significant and material contribution to the air quality in this Commonwealth by minimizing emissions that result from electricity consumed in this Commonwealth, minimizing harmful emissions that adversely affect the residents of this Commonwealth and if the nuclear power plant were to be retired, that retirement would significantly and negatively impact this Commonwealth's ability to comply with State air emissions reduction requirements.

(3) Demonstrate to the satisfaction of the commission, through the financial and other confidential information submitted to the commission under subsection (b), and any

other information required by the commission, which information may be submitted on a confidential basis and shall be treated and maintained as confidential by the commission and, notwithstanding any law to the contrary, shall not be subject to public disclosure that the nuclear power plant's fuel diversity, air quality and other environmental attributes are at risk of loss because the nuclear power plant is projected to not fully cover its costs and risks, or alternatively is projected to not cover its costs, including its risk-adjusted cost of capital, and that the nuclear power plant will cease operations within three years unless the nuclear power plant experiences a material financial change.

(4) Certify annually that the nuclear power plant does not receive any direct or indirect payment or credit under a Federal law, rule, regulation, order, tariff or other action, or a law, rule, regulation, order, tariff or other action of this Commonwealth or any other state, or a regional compact, despite its reasonable best efforts to obtain any such payment or credit, for its fuel diversity, resilience, air quality or other environmental attributes that will eliminate the need for the nuclear power plant to retire, except for any payment or credit received under this section.

(5) Submit an application fee to the commission in an amount to be determined by the commission, but which shall not exceed $250,000, to be used to defray the costs incurred by the commission to administer the ZEC program.

(f) Ranking.--In ranking eligible nuclear power plants from first to last, the commission shall consider how well the nuclear power plants satisfy the criteria provided under this

section and shall also consider other relevant factors such as sustainability or long-term commitment to nuclear energy production in a manner that supports this Commonwealth's cost-effective transition to a zero carbon energy supply. Two or more eligible nuclear power plants may not have the same ranking.

(g) Selection.--The following shall apply:

(1) The commission shall select eligible nuclear power plants to receive ZECs according to their ranking. Beginning with the top-ranked eligible nuclear power plant and continuing in rank order, the commission shall continue to select nuclear power plants but not beyond the point at which the combined number of megawatt hours of electricity produced in the energy year immediately prior to the effective date of this section by all selected nuclear power plants equals 40% of the total number of megawatt hours of electricity distributed by electric public utilities in this Commonwealth in the energy year immediately prior to the effective date of this section.

(2) The commission may not select an eligible nuclear power plant to receive ZECs if the addition of the electricity produced by that nuclear power plant in the energy year immediately prior to the effective date of this section by the selected nuclear power plants ranked ahead of that plant on the rank-ordered list exceeds 40% of the total number of megawatt hours of electricity distributed by electric public utilities in this Commonwealth in the energy year immediately prior to the effective date of this section.

(3) A selected nuclear power plant shall be eligible to receive ZECs 330 days after the effective date of this section. In the first energy year in which an eligible

nuclear power plant is selected, the selected nuclear power plant shall receive a number of ZECs equal to the number of megawatt hours of electricity it produced in that energy year starting on the date of the eligible nuclear power plant's selection. In each energy year thereafter, each selected nuclear power plant shall receive a number of ZECs equal to the number of megawatt hours of electricity that it produced in that energy year.

(h) Eligibility periods.--The following shall apply:

(1) Selected nuclear power plants shall initially receive ZECs for an eligibility period that shall run through the end of the first energy year in which the nuclear power plant is selected, plus an additional three energy years.

(2) No later than 13 months prior to the conclusion of the initial eligibility period established under paragraph (1), and no later than 13 months prior to the conclusion of each three energy year eligibility period thereafter, a nuclear power plant may demonstrate its eligibility to the commission and the commission may certify the nuclear power plant's eligibility to receive ZECs for additional eligibility periods of three energy years, consistent with the provisions of this section.

(3) A selected nuclear power plant shall annually certify to the commission that the nuclear power plant will continue operations at full or near full capacity for the duration of the period of its eligibility to receive ZECs, except with respect to nuclear power plant shutdowns for necessary maintenance and refueling.

(i) Price and purchase of ZECs.--The following shall apply:

(1) The commission shall determine the price of a ZEC

each energy year by dividing the total number of dollars held by electric public utilities in the accounts established under subsection (j)(1) at the end of the prior energy year by the greater of:

(i) forty percent of the total number of megawatt hours of electricity distributed by the electric public utilities in this Commonwealth in the prior energy year; or

(ii) the number of megawatt hours of electricity generated in the prior energy year by the selected nuclear power plants.

(2) Each electric distribution company in this Commonwealth shall be required to begin to purchase ZECs on a monthly basis from each selected nuclear power plant with payment to follow within 90 days after the conclusion of the first energy year in which selected nuclear power plants receive ZECs and within 90 days after the conclusion of each subsequent energy year. The number of ZECs an electric distribution company shall be required to purchase shall equal the total number of ZECs received by the selected nuclear power plants for the prior energy year under subsection (g)(2) multiplied by the percentage of electricity distributed in this Commonwealth by the electric distribution company as compared to other electric public utilities in this Commonwealth.

(3) To ensure that a selected nuclear power plant does not receive double-payment for its fuel diversity, resilience, air quality or other environmental attributes, the commission shall annually determine the dollar amount received by the selected nuclear power plant in an energy

year under a Federal law, rule, regulation, order, tariff or other action, or a law, rule, regulation, order, tariff or other action of this Commonwealth or any other state, or a regional compact referenced in subsection (e)(4). Notwithstanding paragraph (2), the number of ZECs purchased by each electric distribution company from a selected nuclear power plant for an energy year shall be reduced by the number of ZECs equal in value to the dollar amount determined by the commission in this paragraph, multiplied by the percentage of electricity distributed in this Commonwealth by the electric distribution company as compared to other electric public utilities in this Commonwealth. To the extent that the commission determines that a selected nuclear plant receives revenues for its fuel diversity, resilience, air quality or other environmental attributes, the commission shall immediately reduce the number of ZECs on a prospective basis consistent with the level of the revenues.

(i.1) ZEC Fund.--The ZEC Fund is established as a special fund in the State Treasury. Money in the ZEC Fund is appropriated to the commission on a continuing basis for the purpose of implementing the ZEC program. All money received by the commission under this section shall be deposited into the ZEC Fund.

(j) Recovery of costs.--The following shall apply:

(1) The commission shall order the full recovery of all costs associated with the electric distribution company's required procurement of ZECs, and with the commission's implementation of the ZEC program, through a nonbypassable, irrevocable charge imposed on the electric distribution company's retail distribution customers. Within 150 days

after the effective date of this section, each electric distribution company shall file with the commission a tariff to recover from the electric distribution company's retail distribution customers a charge in the amount of $0.004 per kilowatt hour which reflects the emissions avoidance benefits associated with the continued operation of selected nuclear power plants. Within 60 days after the tariff filing under this paragraph, after notice, the opportunity for comment and public hearing, the commission shall approve the tariff, provided that the tariff is consistent with the provisions of this subsection. No later than the date of the commission's order establishing the initial selected nuclear power plants to receive ZECs, each electric distribution company shall implement the tariff and begin collecting from its retail distribution customers the approved charge. Revenues collected by the electric distribution company from the nonbypassable, irrevocable charge shall be placed in a separate, interest-bearing account and shall be used solely to purchase ZECs, and to reimburse the commission for reasonable, verifiable costs the commission incurs to implement the ZEC program to the extent the commission's costs exceed the application fees collected by the commission under subsection (e)(5).

(2) Notwithstanding any provision of this section, an electric distribution company shall not be required to purchase any additional number of ZECs if the cost of the additional number of ZECs exceeds the revenues deposited in the electric distribution company's separate, interest-bearing account, created under paragraph (1), for that energy year, after subtracting the reasonable, verifiable costs

incurred by the commission during that energy year to implement the ZEC program, which costs shall be remitted to the commission and deposited into the ZEC Fund each energy year in a manner to be determined by the commission. Excess money in an electric distribution company's separate, interest-bearing account shall be refunded to its retail distribution customers at the end of each energy year.

(3) The following shall apply:

(i) Notwithstanding the provisions of paragraph (1), and to ensure that the ZEC program remains affordable to retail distribution customers in this Commonwealth, the commission may, in its discretion, reduce the per-kilowatt-hour charge imposed by paragraph (1) starting in the second three-year eligibility period and for each subsequent three-year eligibility period thereafter, provided that the commission determines that a reduced charge will nonetheless be sufficient to achieve the Commonwealth's air quality and other environmental objectives by preventing the retirement of the nuclear power plants that meet the eligibility criteria established under subsections (d) and (e).

(ii) If the commission reduces the per-kilowatt-hour charge imposed by paragraph (1), the reduction shall be applicable to the next eligibility period only and the commission shall make its determination no later than 13 months prior to the start of that eligibility period. Within 30 days thereafter, each electric distribution company shall file, in lieu of the tariff described in paragraph (1), a tariff consistent with the commission's determination. Within 60 days after filing of the tariff,

after notice, the opportunity for comment and public hearing, the commission shall approve the revised tariff, provided that it is consistent with the commission's determination. The revised tariff shall take effect starting in the next eligibility period.

(iii) If the commission does not certify any nuclear power plants for a subsequent eligibility period under this section, the commission may, in its discretion, reduce the per-kilowatt-hour charge imposed under paragraph (1) to ensure that the ZEC program remains affordable to retail distribution customers in this Commonwealth in the final year of the first eligibility period, provided that the commission determines that a reduced charge will nonetheless be sufficient to achieve the Commonwealth's air quality and other environmental objectives by preventing the retirement of the nuclear power plants that meet the eligibility criteria established under subsections (d) and (e).

(iv) For the second three energy year eligibility period, and every subsequent eligibility period thereafter, a selected nuclear power plant shall pay a renewal fee to the commission in an amount to be determined by the commission, but which shall not exceed $250,000, to be used to defray the costs incurred by the commission to administer the ZEC program.

(k) Performance.--The following shall apply:

(1) A selected nuclear power plant shall be excused from performance, including, but not limited to, the sale of ZECs, and a payment from an electric distribution company shall not be due to the selected nuclear power plant, if:

(i) the selected nuclear power suspends or ceases operations, despite the selected nuclear power plant's reasonable efforts to continue operations, due to an event beyond its control, including, but not limited to, acts of God, flood, drought, earthquake, storm, fire, lightning, epidemic, war, riot, labor dispute, labor or material shortage, sabotage or explosion. The selected nuclear power plant shall no longer be excused from performance, and a payment from an electric distribution company shall be due, after conclusion of the event;

(ii) the General Assembly enacts a law imposing a significant new tax, special assessment or fee on the generation of electricity, the ownership or leasehold of a generating unit or the privilege or occupation of the generation, ownership or leasehold of generation units by a selected nuclear power plant;

(iii) a Federal or State law is enacted that materially reduces the value of a ZEC or the commission exercises its discretion to reduce the amount of the per-kilowatt-hour charge under subsection (j)(3);

(iv) the selected nuclear power plant requires capital expenditures in excess of $40,000,000 that were neither known nor reasonably foreseeable at the time it was selected to receive ZECs, and the capital expenditures are expenditures that a prudent owner or operator of a selected nuclear power plant would not undertake; or

(v) the United States Nuclear Regulatory Commission terminates the selected nuclear power plant's license.

(2) If a selected nuclear power plant ceases operations

during an eligibility period for any reason other than those specified under this subsection, the selected nuclear power plant shall pay a charge to the electric public utilities that purchased ZECs from the selected nuclear power plant in an amount equal to the compensation received for the sale of ZECs since the commission's last determination of the selected nuclear power plant's eligibility to receive ZECs. An electric distribution company shall provide a refund to its retail distribution customers in an amount equal to the charge paid by a selected nuclear power plant to the electric distribution company under this paragraph.

(3) The owner of a selected nuclear power plant shall, within two years after receiving ZECs, submit a plan to the commission to retain, retrain or compensate personnel whose employment would be eliminated as a direct result of the cessation of the selected nuclear power plant's operations, including an alternative economic development plan for communities that rely on the selected nuclear power plant for a substantial portion of the community's tax revenues.

(l) Employee layoffs.--A selected nuclear power plant may not lay off any personnel unless the lay-off is due to employee misconduct or underperformance issues or due to the suspension or cessation of the selected nuclear power plant's operations as provided under subsection (k).

(m) Study and report by selected nuclear power plant.--The owner of a selected nuclear power plant shall, within two years after receiving ZECs, conduct a study and prepare a written report in cooperation with selected experts, to determine the optimal use of dry cask storage of spent nuclear fuel at its site, considering environmental impacts, worker safety and cost

impacts.

(n) Study and report by commission.--No later than 10 years after the effective date of this section, the commission shall conduct a study to evaluate the efficacy of the ZEC program and submit a written report to the Governor and the General Assembly. In conducting the study, the commission shall evaluate the ZEC program's effect on the premature retirement of nuclear power plants, its effect on the air quality and environment in this Commonwealth and its contribution to a more reliable energy supply by assuring fuel diversity. The study shall also evaluate the ZEC program's benefits and costs to ratepayers. The written report shall:

(1) Summarize the study and analysis conducted under subsection (a).

(2) Discuss and quantify the potential benefits and costs associated with the ZEC program.

(3) Recommend any changes to the ZEC program or whether the ZEC program should continue.

(4) Recommend whether the ZEC program should be expanded to include other technologies.

(o) Definitions.--As used in this section, the following words and phrases shall have the meanings given to them in this subsection unless the context clearly indicates otherwise:

"ZEC." A zero emissions certificate established by the commission under subsection (a).

"ZEC program." The Zero Emissions Carbon Program established by the commission under subsection (a).

Section 8.1. Decarbonization.

(a) General rule.--The minimum reduction of carbon dioxide emissions as a percentage of 2020 emissions from the generation

of all of the electric energy sold by an electric distribution company or electric generation supplier to retail electric customers in this Commonwealth shall be as follows:

(1) 2.5% for energy year 2022.

(2) 13.1% for energy year 2026.

(3) 14.7% for energy year 2030.

(4) 23.0% for energy year 2034.

(5) 37.9% for energy year 2038.

(6) 47.9% for energy year 2042.

(7) 66.0% for energy year 2046.

(8) 100.0% for energy year 2050 and thereafter.

(b) Relief.--An electric distribution company may petition the commission for relief from the requirements under subsection (a) on the basis that the requirement would threaten the reliability or security of electric service to customers. The commission shall consider in-State and regional transmission entity resources and shall evaluate the reliability in ruling upon a petition for relief.

(c) Carbon constrained energy credit.--The commission shall complete a proceeding to allow for the issuance of carbon constrained energy credits to carbon constrained energy systems. A carbon constrained energy credit shall be a tradable instrument that is used to establish, verify and monitor compliance with this section. A unit of credit shall equal one megawatt hour of electricity from a carbon constrained source. The carbon constrained energy credit shall remain the property of the carbon constrained energy system until the carbon constrained energy credit is voluntarily transferred by the carbon constrained energy system.

Section 5. This act shall take effect in 90 days.