MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

IN RE: CITIZEN PETITION FOR RULEMAKING TO REQUIRE THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION TO FULFILL ITS STATUTORY, CONSTITUTIONAL, AND PUBLIC TRUST OBLIGATIONS TO REDUCE GREENHOUSE GAS EMISSIONS ALONG A TRAJECTORY THAT IS BASED ON THE BEST CLIMATE SCIENCE AND THAT WILL REDUCE THE IMPACTS OF CLIMATE CHANGE IN MAINE. *Filed by* **693 VOTERS REGISTERED IN THE STATE OF MAINE AND 33 YOUTH PETITIONERS**	**CITIZEN PETITION TO INITIATE RULEMAKING PURSUANT TO 5 M.R.S.A. § 8055**

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On behalf of petitioners

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I. INTRODUCTION

Anthropogenic climate change and ocean acidification are the greatest threats facing human civilization. Given the persistence of certain long-lived greenhouse gases ("GHG") in the atmosphere, especially carbon dioxide ("CO_2"), the negative impacts of climate change and ocean acidification in Maine will be borne most heavily by today's youth and by future generations. Petitioners bring this action to ensure that the climate remains stable enough to maintain their and their posterity's fundamental and unalienable rights to a livable future in Maine, which includes a healthy atmosphere and stable climate system.

Accordingly, now come 693 registered voters of the State of Maine and 33 youth[1], together with Earth Guardians, 350 Maine, Citizens' Climate Lobby, and Conservation Law Foundation (collectively "Petitioners") to petition the Department of Environmental Protection ("Department" or "DEP") pursuant to 5 M.R.S.A. §8055(3) to initiate rulemaking under the Department's authority and pursuant to its obligations under statutory law, the Maine and United States Constitutions, and the Public Trust Doctrine to promulgate rules that protect the common welfare of present and future generations of Mainers by implementing an effective carbon dioxide and greenhouse gas emission reduction strategy that is based on the best climate science and that is aimed at reducing the impacts of climate change in Maine. Such rules are necessary in order to ensure that the worst impacts of climate change and ocean acidification are avoided and do not cause catastrophic and irreversible harm to present and future generations.

Text of the proposed rules and petition signatures, as verified and certified pursuant to 21-A M.R.S.A. §354(7), have been submitted to the Department simultaneously with this Petition. The materials circulated during the petition drive are attached as Appendix 2.

A. Petitioners

This petition is brought by 693 **registered Maine voters** who live throughout Maine in 108 communities and represent a variety of interests. Each petitioner is concerned about the current and predicted impacts of climate change and ocean acidification in Maine and respectfully request that Maine use this petition as an opportunity to phase out fossil fuels and develop a comprehensive plan based on the best available climate science to address climate change and ocean acidification with all deliberate speed.

The 33 **youth petitioners** represent the youngest living generation of public trust beneficiaries in Maine and have a profound interest in ensuring that the climate remains stable enough to ensure their rights to a livable future. A livable future includes the opportunity to drink

[1] Verified signatures of registered voters are attached in Appendix 1. Signatures of youth petitioners and non-voters are also included. The organizers of this petition effort expect to continue to collect youth signatures.

clean water and abate thirst, to grow food that will abate hunger, to be free from imminent property damage caused by extreme weather events, and to enjoy the abundant and rich biodiversity on this small planet. The petitioners request the promulgation of the rules herein proposed in order to protect their interests in a livable future and an inhabitable Maine.

Earth Guardians is a nonprofit organization with youth chapters on five continents and groups throughout the United States with thousands of members working together to protect the Earth, the water, the air, and the atmosphere and to create healthy sustainable communities globally. They inspire and empower young leaders, families, schools, organizations, cities, and government officials to make positive change locally, nationally, and globally to address the critical state of the Earth.

350 Maine is a grassroots movement dedicated to solving the planetary climate crisis. We grow our power collectively to find real and lasting solutions, to end our dependence on fossil fuels, and to build a healthy, sustainable life for people and the planet. 350 Maine believes that Maine holds a unique position in this global movement as a gateway to coastal waters and foreign markets. Maine also has abundant fresh water and the largest contiguous forest east of the Mississippi River; ecosystems that must be protected.

Citizens' Climate Lobby is a nonprofit, nonpartisan, grassroots advocacy organization with hundreds of chapters across the world working to create the political will for a livable world. There are seven active chapters in Maine, as well as two developing chapters. Each chapter empowers people to experience breakthroughs exercising their personal and political power.

Conservation Law Foundation is a non-profit, member-supported public interest advocacy organization that is dedicated to solving environmental problems that threaten the people, communities and natural resources of New England, including Maine, where many of its members reside. Conservation Law Foundation has a longstanding commitment to advocating for the right of Maine citizens to clean air and clean water, and for fighting to cut carbon dioxide and other greenhouse gases that are damaging our climate, causing bigger and more extreme storms, changing our growing seasons and warming our oceans.

B. Respondent

The **Maine Department of Environmental Protection** is the state agency responsible for protecting and restoring Maine's natural resources and enforcing the state's environmental and natural resource laws.[2] The DEP is legally obligated to "prevent, abate and control the

[2] *About the Maine Department of Environmental Protection*, MAINE DEP, http://www.maine.gov/dep/about/index.html (last visited Jul. 14, 2017).

pollution of the air, water, and land" and to "protect and enhance the public's right to use and enjoy the State's natural resources."[3] In fulfilling this mandate, the DEP makes recommendations to the Maine Legislature; issues licenses, permits, and certifications; initiates enforcement actions; serves as the primary link to the federal government on environmental issues, even administering some federal programs; and works with the public, other state agencies, and legislators to implement environmental laws.[4]

Importantly, the DEP has significant control and responsibility for Maine's greenhouse gas emissions due to the affirmative acts the agency takes to permit and license facilities that emit GHG emissions. For example, the DEP issues permits and licenses for incinerators, internal combustion engines, fossil fuel burning facilities and equipment (including power plants), concrete plants, and other stationary and area sources, all of which emit GHGs.[5] DEP is failing to perform its duty to protect and restore Maine's natural resources and transition the state away from the use of fossil fuels. DEP's actions and omissions have substantially contributed to unsafe levels of atmospheric CO_2 and a dangerous climate system.

II. SCIENTIFIC IMPERATIVE FOR THE DEPARTMENT TO ACT TO REDUCE GREENHOUSE GAS EMISSIONS IN MAINE

Science unequivocally shows that anthropogenic climate change and ocean acidification are occurring and are threating the stability of the global climate system.[6] In Maine, average annual temperatures increased 1.7º C (3º F) between 1895 and 2014.[7] The relative length and character of each season has also changed.[8] It is predicted that, as Maine's summers become warmer and longer, the number of excessively hot and humid days with heat indices above 95°F

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[3] *Id.*
[4] *Id.*
[5] *Permits Licenses, Certifications,* MAINE DEP, http://www.maine.gov/dep/permits/index.html (last visited Jul. 14, 2017).
[6] *See generally,* Am. Ass'n for the Advancement of Sci., *What We Know: The Reality, Risks and Response to Climate Change* (2014) ("Based on well-established evidence, about 97% of climate scientists have concluded that human-caused climate change is happening."); Intergovernmental Panel on Climate Change ("IPCC"), *Summary for Policymakers, Climate Change 2013: The Physical Science Basis: Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Thomas F. Stocker et al., eds., 2013), http://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WGIAR5_SPM_brochure_en.pdf [hereinafter IPCC AR4]; Intergovernmental Panel on Climate Change, *Summary for Policymakers, Climate Change 2014: Impacts, Adaptation, and Vulnerability: Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Christopher B. Field et al. eds., 2014), http://ipcc-wg2.gov/AR5/images/uploads/IPCC_WG2AR5_SPM_Approved.pdf; Nat'l Acad. of Sci. & The Royal Soc'y, *Climate Change Evidence & Causes* (2014).
[7] I.J., Fernandez et al., *Maine's Climate Future: 2015 Update* 2 (2015), p. 2 http://cci.siteturbine.com/uploaded_files/climatechange.umaine.edu/files/MainesClimateFuture_2015_Update2.pdf.
[8] *Id.* at 3.

are likely to increase.[9] Excess heat caused by climate change is predicted to result in thousands of additional deaths in the United States by 2050.[10] Maine Physicians for Social Responsibility have affirmed that climate change is a critical public health threat in Maine due to effects on drinking water, insects and other pests, and psychological issues, in addition to the effects of heat waves.[11]

Additionally, precipitation is expected to increase, while the duration of snowpack is predicted to decrease, negatively impacting the winter sports economy.[12] In the Gulf of Maine, warming waters are causing marine animals to shift their territories and are resulting in an influx of new species.[13] Over the past century, oceans around the planet have become more than 30% more acidic; a decline of approximately 0.1 pH units.[14] Because of its geography, the Gulf of Maine, and its valuable shellfish industry, may be uniquely susceptible to acidification.[15] Globally, sea level is rising at a rate much faster than at any time in the past 5,000 years; at a rate of 0.07 inches per year.[16] Impacts of rising seas in Maine will be seen in a decrease in protective salt marshes, increased beach erosion and flooding, and increased insurance costs.

Atmospheric CO_2 levels are currently on a path to reach a climatic tipping point.[17] Absent immediate action to reduce CO_2 emissions, atmospheric CO_2 may reach levels so high that life on Earth as we know it becomes unsustainable. Refer to Appendix 3 for a fuller explanation of the scientific imperative for action to reduce greenhouse gas emissions.

The best peer-reviewed climate science indicates that atmospheric CO_2 concentrations must return to 350 ppm by century's end in order to avoid the most catastrophic and irreversible impacts of climate change and ocean acidification.[18] If global CO_2 emissions are reduced by at least 85 percent from 1990 levels by 2050, and continue to decline thereafter, and there is significant reforestation around the world (approximately 100 gigatons of carbon drawdown must happen through reforestation), global atmospheric CO_2 levels could stabilize at 350 ppm by

[9] *Id.* at 4.
[10] *Id.*
[11] *Id.* at 18.
[12] *Id.* at 9-10.
[13] *Id.* at 14.
[14] *Id*. at 15.
[15] *Id.*
[16] *Id.* at 16.
[17] James Hansen, Storms of My Grandchildren 224-30, 260 (2009).
[18] James Hansen et al., *Assessing "Dangerous Climate Change": Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature*, PLOS ONE 8:12, 1, 5, 10, 17-18 (2013) [hereinafter *Assessing "Dangerous Climate Change"*] (attached as Appendix 4); James Hansen et al., *Ice Melt, Sea Level Rise and Superstorms; Evidence from Paleoclimate Data, Climate Modeling, and Modern Observations that 2 °C Global Warming Could be Dangerous*, Atmos. Chem. & Phys. 16, 3761, 3801 (2016) [hereinafter *Ice Melt, Sea Level Rise and Superstorms*] (attached as Appendix 5); James Hansen et al., *Young people's burden: requirement of negative CO2 emissions*, Earth Syst. Dynam. 8, 577-616 (2017) (attached as Appendix 6).

2100. In order to meet this target, CO_2 emissions must be reduced by an adequate margin each year.[19]

The rate of emission reductions required to return the global atmospheric CO_2 concentrations to a safe level depends on the year in which emissions peak.[20] For example, "if [global] emissions reduction had begun in 2005, reduction at 3.5%/year would have achieved 350 ppm at 2100."[21] A global peak in 2012 or 2020 would require annual reductions of 6% and 15%, respectively.[22] For emission reductions beginning in 2017, an 8% reduction in emissions from Maine, and the rest of the world, in conjunction with reforestation, would still have been sufficient to stabilize the atmospheric concentration of CO_2 at 350 ppm by 2100.[23] Importantly, these targets reflect the global average emission reductions required to remedy the current climate emergency without accounting for the differentiated and equitable responsibilities of individual states and their historic contribution to carbon pollution. Refer to Appendix 3, Section C for further explanation of this scientific prescription.

While Maine's emissions have been declining in recent years, they have not been declining at a steep enough rate to prevent the real and immediate threats posed by climate change in Maine. The Department's latest biennial report on Maine's progress toward greenhouse gas reduction goals indicates that Maine is on target to meet the interim goal of emissions 10 percent below 1990 levels by 2020.[24] The report does not, however, present any evidence about whether Maine is on target to meet its longer term goal of emissions reductions sufficient to eliminate any dangerous threat to climate. Because Mainers' per capita emissions are higher than the global average[25] and because Mainers are wealthy compared to the rest of the world[26] and, therefore, more capable of generating and paying for clean energy, emission reductions in Maine of greater that 8 percent a year would be preferable and more equitable from

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[19] Hansen, *Assessing "Dangerous Climate Change," supra* note 17, at 1, 5, 10, 17-18.
[20] *Id.* at 10, 18.
[21] *Id.*
[22] *Id.* at 10.
[23] Declaration of Dr. James E. Hansen in Support of Our Children's Trust et al.'s Submission to the UN Committee on the Rights of the Child Regarding State Obligations, Children's Rights and Climate Change, at 26 (Aug. 19, 2016), (attached as Appendix 7).
[24] *Sixth Biennial Report on Progress toward Greenhouse Gas Reduction Goals*, MAINE DEP, January 2016, http://www.maine.gov/tools/whatsnew/attach.php?id=667449&an=1 (last visited Jul. 14, 2017).
[25] Maine's per capita CO2 emissions in 2014 were 12.5 metric tons, which is far greater than the global average of approximately 5 metric tons of CO2 per person per year. U.S. Energy Information Administration, *State CO2 Emissions*, https://www.eia.gov/environment/emissions/state/analysis/ (last visited July 14, 2017); The World Bank, *CO2 Emissions (metric tons per capita)*, http://data.worldbank.org/indicator/EN.ATM.CO2E.PC/countries?display=default (last visited July 14, 2017).
[26] Maine's median household income is over $49,000, while worldwide, the median household income is just under $10,000. U.S. Census Bureau, *State & County Quick Facts: Maine*, https://www.census.gov/quickfacts/table/INC110215/23,00 (last visited July 14, 2017); Glenn Phelps & Steve Crabtree, *Worldwide, Median Household Income About $10,000*, http://www.gallup.com/poll/166211/worldwide-median-household-income-000.aspx (last visited July 14, 2017).

a global perspective. For these reasons, the proposed rules seek emission reductions of *at least* 8 percent each year, which correlates to Maine reducing its emissions to approximately 75 percent below 2003 levels by the year 2035. Maine's emissions in 2003 were 27.10 million metric tons of carbon dioxide equivalents ($MMTCO_2e$).[27] A 75 percent reduction would be a reduction of 20.33 $MMTCO_2e$ or total annual emissions of 6.77 $MMTCO_2e$ by 2035.

Maine law contemplates precisely such a reduction; 38 M.R.S.A. § 576(3) suggests that GHG emissions of 75 to 80 percent below 2003 levels may be required in "the long term."[28] There is no date certain associated with Maine's long term statutory goal. Therefore, petitioners have harmonized that statutory goal with the scientific consensus in favor of long-term emissions reductions of *at least* 8 percent per year to arrive at the proposed goal of a 75% reduction from 2003 levels by 2035.

The rules proposed herein are based on the best available climate science and if the Department does not agree with this science or the required emission reductions, Petitioners respectfully ask that the Department present the climate science it is relying on and also demonstrate how Maine's emission reductions are sufficient to eliminate any dangerous threat to the climate and to Petitioners' future health and well-being.

III. AUTHORITY FOR THE DEPARTMENT TO ACT TO REDUCE GREENHOUSE GAS EMISSIONS IN MAINE

The essential purpose of the Department is to protect Maine's natural resources for the public's benefit. Specifically, "The department shall prevent, abate and control the *pollution of the air*, water and land and preserve, improve and *prevent diminution of the natural environment of the State*. The department *shall* protect and enhance the *public's right* to use and enjoy the State's natural resources."[29] Per the *Protection and Improvement of Air Act*, the Department is authorized to "exercise the police power of the State in a coordinated state-wide program to control present and future sources of emission of air contaminants to the end that air polluting activities of every type *shall be regulated* in a manner that reasonably insures the continued health, safety and general welfare of all of the citizens of the State; protects property values and protects plant and animal life."[30] Ensuring public safety is "among the most basic obligations state government owes its people."[31] Conversely, the State's actions that contribute to GHG emissions and, thus, climate change and ocean acidification, and the State's failure to adequately respond to the threat of climate change, affirmatively harm Maine's citizens.

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[27] *Sixth Biennial Report on Progress toward Greenhouse Gas Reduction Goals*, MAINE DEP, January 2016, at 4, http://www.maine.gov/tools/whatsnew/attach.php?id=667449&an=1 (last visited Jul. 15, 2017).
[28] 38 M.R.S.A. § 576(3).
[29] 38 M.R.S. § 341-A(1) (2012) (emphasis added).
[30] 38 M.R.S. § 581 (2012) (emphasis added).
[31] *State v. Letalien*, 2009 ME 130, ¶50, 985 A.2d 4.

The primary authority for the Department to regulate greenhouse gas emissions is 38 M.R.S.A. § 576 which sets goals for greenhouse gas emissions reductions. The Act established a "lead by example" initiative for State government; set short-, medium-, and long-term targets for greenhouse gas emission reductions; mandated the creation of a Climate Action Plan; and established the Department's authority to evaluate the State's progress toward meeting the statutory reduction goals and to make recommendations to the Maine Legislature regarding adjustment of the reduction goals. Further statutory authority is provided by 38 M.R.S.A. §§ 341-A(1), 581, 582, 584, 585, 585-A, 585-B, 585-C, 575, 590, 601-B, 1301 *et seq.*, and 1310-N.

The Department also has authority and obligations under the Maine and United States Constitutions. The preamble to the Constitution of the State of Maine states that the purpose of the State government is to "establish justice, insure tranquility, provide for our mutual defense, promote *our common welfare*, and secure to ourselves and *our posterity* the blessings of liberty."[32] Additionally, Article 1, Section 1 of the Maine Constitution states: "All people are born equally free and independent, and have certain natural, inherent and unalienable rights, among which are those of enjoying and defending life and liberty, acquiring, possessing and protecting property, and of pursuing and obtaining safety and happiness."[33] Under the terms of the 14th Amendment to the U.S. Constitution, United States citizens have the right not to be deprived of life, liberty, or property, without due process of law, nor be denied equal protection of the laws.[34]

The State of Maine, including the Department of Environmental Protection, also has an obligation pursuant to the Public Trust Doctrine to manage and protect its natural resources for present and future generations of Mainers. Maine has an affirmative and mandatory duty under the Public Trust Doctrine to prevent substantial impairment to the State's essential natural resources, including the atmosphere (air), oceans, beaches, freshwaters of the State, fish, wildlife, and forests.

IV. PROPOSED REGULATORY CHANGES AND ADDITIONS

The proposed rules seek greenhouse gas emission reductions of *at least* 8 percent each year, which correlates to Maine reducing its emissions to approximately 75 percent below 2003 levels by the year 2035. This goal is grounded in science (in particular, see Appendices 3-6) and necessary in order to meet the requirements of 38 M.R.S.A. § 576, which include achieving "reduction sufficient to eliminate any dangerous threat to the climate" and specifically describe attaining that long-term goal through "reduction to 75% to 80% below 2003 levels."

[32] Me. Const. preamble (emphasis added).
[33] Me. Const. art. 1, § 1.
[34] U.S. Const. amend. XIV, § 1.

Petitioners are particularly concerned about carbon dioxide (CO_2) emissions because CO_2 is the principal force driving changes in the Earth's energy balance and because CO_2 remains in the atmosphere for millennia[35] (as compared to some other shorter-lived greenhouse gases). Nonetheless, the proposed rules refer to units of carbon dioxide equivalents (CO_2e) in recognition of the fact that all greenhouse gas emissions have an impact on climate stability and in order to efficiently compare/evaluate reduction goals among different greenhouse gases.

A. Greenhouse Gas Emissions Standards

Chapter xxx: GREENHOUSE GAS EMISSIONS STANDARDS

SUMMARY: This regulation establishes emissions standards for greenhouse gas emissions from air contaminant sources.

1. Scope/Applicability

A. Geographic scope. This regulation applies statewide.

B. Definitions

1. Unless otherwise noted, all terms have the meanings set forth in 06-096 CMR Ch. 100.

C. General requirement. No person shall emit or cause to be emitted any greenhouse gas in an amount that exceeds the emission standards promulgated pursuant to Section 2 of this Chapter, unless the source is listed in Section 1(D) of this Chapter. Certain sources may be required to achieve more stringent greenhouse gas emissions standards than those promulgated under this Chapter by air emission license conditions, Best Available Control Technology (BACT), National Emissions Standards for Hazardous Air Pollutants (NESHAPS), Best Practical Treatment (BPT) and/or New Source Performance Standards (NSPS).

2. Emission Standards

A. The following standards shall apply until 2035. The Commissioner shall set a goal for 2050 "sufficient to eliminate any dangerous threat to the climate."[36]

[35] Hansen, *Assessing "Dangerous Climate Change" supra* note 17, at 1.
[36] 38 M.R.S. § 576(3) (2012).

B. Statewide greenhouse gas emission limit. The statewide greenhouse gas emission limit (10% reduction from 1990 levels) to be achieved by 2020, is equal to or below 19.07 million metric tons per year of carbon dioxide equivalents (CO2e), based on Maine's historical 1990 greenhouse gas emissions of 21.19 $MMTCO_2e$.[37] The statewide greenhouse gas emission limit for each year beyond 2020, shall be set as an 8% reduction from the prior year's limit, beginning with a limit for 2021 of 17.55 million metric tons.[38] The greenhouse gas limit excludes aviation and international bunker fuel emissions. The Department may update the numerical greenhouse gas emission limit should improved methodologies and data become available for measuring emissions. The Department shall make any such modification to the numerical greenhouse gas emission limit pursuant to its regular rulemaking processes. The limit serves as a monitor of progress on the statutory greenhouse gas reduction goals, specifically to determine the achievement and maintenance of the state's short-term greenhouse gas reductions of 10% from 1990 levels by 2020 and long-term reductions of 75-80% from 2003 levels by 2035.

C. Emission limits for emission source categories. The Department may establish minimum facility-wide greenhouse gas emissions limits, in tons per year CO2e, for various emission source categories in order to achieve the statewide limit in Section 2-B by 2020. Any such source category emissions limits shall be reviewed every five years from their effective date.

D. Greenhouse gas emission reduction plans.

1. This section applies to an owner or operator of either (1) a stationary source with the potential to emit greenhouse gas emissions (biogenic plus non-biogenic) equal to or above 10,000 tons per year CO2e or (2) a vehicle fleet of automobiles and/or trucks registered in the state of Maine with the potential to emit 5,000 tons per year CO2e.

2. Each owner or operator of a stationary source or vehicle fleet meeting the requirements of Section 2-D-1 of this Chapter shall submit a greenhouse gas emission reduction plan for the Commissioner's approval within twelve (12) months of the effective date of this section. An owner or operator may submit up to one (1) written request for an extension 30 days prior to the deadline.

3. Each greenhouse gas emission reduction plan for a stationary source shall establish a minimum facility-wide greenhouse gas emissions cap in tons per year CO2e, to be achieved by 2020 and thereafter reduced by 8% year-on-year until at least 2035. The minimum facility-wide greenhouse gas emissions cap shall be based on the statewide greenhouse gas emission limit in Section 2-B of this Chapter, or, if applicable, a source

[37] 21.19 $MMTCO_2e$ x 0.90 = 19.07$MMTCO_2e$.
[38] 19.07$MMTCO_2e$ x 0.92 = 17.55 $MMTCO_2e$.

category emission limit promulgated pursuant to Section 2-C of this Chapter. The minimum facility-wide greenhouse gas emissions cap shall be calculated based on the proportion of the statewide, or source category, greenhouse gas emissions attributable to that facility in the prior year or projected greenhouse gas emissions if the facility was not fully operational during the prior year. The formula for calculating the minimum facility-wide greenhouse gas emissions cap is as follows:

> Minimum facility-wide greenhouse gas emissions cap =
> annual facility-wide greenhouse gas emissions (actual from prior year or projected) / annual statewide (or source category) greenhouse gas emissions * statewide (or source category) greenhouse gas emission limit

4. Each greenhouse gas emission reduction plan for a stationary source shall indicate how the facility will comply with Chapters 115, 117, 121, 127, 137, 140, 146, 148, 150, 164, 165, and 305, as amended, if applicable.

5. Each greenhouse gas emission reduction plan for a stationary source will be used to evaluate and establish an annual facility-wide greenhouse gas emissions cap for the stationary source in support of achieving and maintaining the statewide greenhouse gas limit. The approved facility-wide greenhouse gas emissions cap and the associated provisions will be made a part of any existing Part 70 permit, and may be revised through the permit process to respond to new rules, updated technology, greenhouse gas reduction initiatives, and any other circumstances deemed necessary by the Commissioner to facilitate the state's greenhouse gas limit.

6. Once a greenhouse gas emissions plan is approved and integrated into any existing Part 70 permit, the greenhouse gas emission reduction plan shall become a part of the permit application process for renewals and any required modifications. With each subsequent greenhouse gas emission reduction plan submittal, the owner or operator of the stationary source shall report:

a. The greenhouse gas emission reduction status;
b. Factors contributing to the emission changes;
c. Any control measure updates; and
d. Any new developments or changes that would affect the basis of the facility-wide greenhouse gas emissions cap.

7. Each greenhouse gas emission reduction plan for a vehicle fleetshall establish a minimum fleet-wide greenhouse gas emissions cap in tons per year CO2e, to be achieved by 2020 and thereafter reduced by 8% year-on-year until at least 2035. The minimum fleet-wide greenhouse gas emissions cap shall be based on the statewide greenhouse gas emission limit in Section 2-B of this Chapter. The minimum fleet-wide greenhouse gas

emissions cap shall be calculated based on the average greenhouse proportion of the statewide greenhouse gas emissions attributable to that fleet in the prior year. The emissions for vehicles in the fleet shall be calculated based on miles traveled multiplied by the average emissions per mile of specific vehicle model; the emissions from each vehicle in the fleet will them be summed to calculate fleet-wide emissions. The formula for calculating the minimum fleet-wide greenhouse gas emissions cap is as follows:

> Minimum fleet-wide greenhouse gas emissions cap =
> fleet-wide greenhouse gas emissions from prior year / statewide greenhouse gas emissions from prior year
> * statewide greenhouse gas emission limit

8. Each greenhouse gas emission reduction plan, for either a stationary source or vehicle fleet, shall include monitoring and recording of greenhouse gas emissions on at least a quarterly basis. These records must be submitted to the Department on at least a quarterly basis and include a comparison of recorded greenhouse gas emissions to the facility-wide greenhouse gas emissions cap in the greenhouse gas emission reduction plan for that stationary source or vehicle fleet. Each stationary source shall report greenhouse gas emissions in an emission statement, according to the terms of Chapter 137.

E. Enforcement of this chapter.

1. Failure to submit an adequate greenhouse gas emission reduction plan, or failure to submit relevant facts or correct information upon becoming aware of such failure, constitutes a violation of this chapter. During the processing of a greenhouse gas emission reduction plan, if the Department determines that a re-submittal of the plan is required, or submittal of additional information is necessary to evaluate or take final action on the plan, the Department may make the request in writing and set a reasonable deadline for the response.

2. If the owner or operator of a stationary source or vehicle fleet meeting the requirements of Section 2-D-1 of this Chapter fails to submit an adequate greenhouse gas emission reduction plan, or if a facility- or fleet- wide greenhouse gas emissions cap cannot be mutually agreed upon, the Department reserves the right to establish, and incorporate into any applicable permit, a facility- or fleet- wide greenhouse gas emissions cap as required or the lowest cap deemed achievable by the stationary source or vehicle fleet based on the intent of this chapter.

3. Should the facility-or fleet- wide greenhouse gas emissions cap not be met by January 1, 2020 and annually reduced thereafter at a rate of 8% per year, the owner or operator of

the stationary source or vehicle fleet shall be subject to enforcement action for each quarter after 2019 that the facility- or fleet- wide cap is not met. Compliance with the facility- or fleet- wide cap shall be determined at the end of each calendar year, or January 1 of the following year, starting with the end of 2019 or January 1, 2020. Each CO2e ton over the cap shall constitute a separate offense and violation.

F. Review and update. Not later than December 31, 2021, the Department shall complete a review, including an opportunity for public comment, of the requirements of this chapter to determine whether the emissions standards should be amended in order to ensure compliance with the goals set forth in 38 M.R.S.A., Section 576. This review shall evaluate annual greenhouse gas emissions, the statewide and source category emissions limits, the greenhouse gas emission reduction plan process, and any other information relevant to review of this chapter. If the Department determines that the provisions in this chapter, or any chapters enacted pursuant to it, are not adequate to meet the goals set forth in 38 M.R.S.A., Section 576, the Department shall revise those provisions to ensure the attainment of those statutory goals.

AUTHORITY: 38 M.R.S.A., Section 585
38 M.R.S.A., Section 576

EFFECTIVE DATE: **xxxxxx**

B. Compilation of Amendments to Regulations Related to Reducing Greenhouse Gas Emissions in Maine

SUMMARY: This list provides a summary of proposed changes to Department of Environmental Protection regulations reducing the emissions of greenhouse gases in compliance with the reduction goals of the Climate Change Act, 38 M.R.S §§ 576-579.

1. **06-096 CMR Ch. 117, § 1(10) is enacted to read:**
   - (10) Any emissions unit which has the potential to emit greenhouse gases shall continuously monitor such emissions as necessary to satisfy the monitoring and reporting requirements of 06-096 CMR Ch. ###, *Greenhouse Gas Emission Standards*.

2. **06-096 CMR Ch. 121, § 5(11) is enacted to read:**
   - (11) Greenhouse Gases. The emission limits for greenhouse gases, or carbon dioxide equivalents (CO2e) shall be the limits specified in 06-096 CMR Ch. ###, *Greenhouse Gas Emission Standards*.

3. **06-096 CMR Ch. 137, § 1(C) is amended to read:**
    - C. This regulation applies to those stationary sources required to report their emissions pursuant to Section 1(B) of this Chapter, or are subject to emission standards under 06-096 CMR Ch. ###,*Greenhouse Gas Emission Standards,* and that emit any of the following greenhouse gases:

        (1) Carbon dioxide (CO_2)
        (2) Methane (CH_4)
        (3) Nitrous oxide (N_2O)
        (4) Hydrofluorocarbons (HFCs)
        (5) Perfluorocarbons (PFCs)
        (6) Sulfur hexafluoride (SF_6)
        (7) Any carbon dioxide equivalents (CO2e) regulated under 06-096 CMR Ch. ###, *Greenhouse Gas Emission Standards*.

4. **06-096 CMR Ch. 137, § 2(B) is amended to read:**
    - B. Greenhouse gas (GHG). "Greenhouse gas (GHG)" means one of the following gases: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), or any other gas subject to emission standards under 06-096 CMR Ch. ###, *Greenhouse Gas Emission Standards*.

5. **06-096 CMR Ch. 137, § 3(B) is amended to read:**
    - B. Greenhouse Gas Emission Statements. The owner or operator of any facility meeting the applicability requirements in Section 1(D) or (E) shall file an emission statement with the Department on an annual basis for those greenhouse gases described in Section 1(C) of this chapter, or otherwise subject to emission standards under 06-096 CMR Ch. ###, *Greenhouse Gas Emission Standards*.

6. **06-096 CMR Ch. 140, § 2(B)(15) is enacted to read:**
    - (15) A plan to reduce greenhouse gas emissions to an emissions level in compliance with 06-096 CMR Ch. ###, § (D), *Greenhouse Gas Emission Standards*.

7. **06-096 CMR Ch. 140, § 2(B)(#) is enacted to read:**
    - #. Greenhouse gas emission limits. The Department may include limits on the emission of any greenhouse gas regulated under 06-096 CMR Ch. ###, *Greenhouse Gas Emission Standards,* as a term of any Part 70 license. Such limits shall not be stricter than the standards imposed by 06-096 CMR Ch. ###.

8. **06-096 CMR Ch. 146, § 3(#) is enacted to read:**
    - #. CO_2 equivalent emissions (CO_2e). "CO_2 equivalent emissions" means CO_2e as defined by 06-096 CMR Ch. Ch. 100, § 29.

9. 06-096 CMR Ch. 146, § 4(A) is amended to read:

- A. For model years 1991 and newer, a level of peak smoke opacity of forty (40) percent, and emission levels of ### ppm of CO_2e;

10. 06-096 CMR Ch. 146, § 4(B) is enacted to read:

- B. For model years 1990 and older, a level of peak smoke opacity of fifty-five (55) percent, and an average emission level of ### ppm of CO_2e;

11. 06-096 CMR Ch. 146, § 4(C) is repealed.

12. 06-096 CMR Ch. 148, § 5(F) is enacted to read:

- F. Greenhouse gas emission limitation. Greenhouse gas emission standards for non-emergency generators are as follows:

Greenhouse Gas Emission Standards for Non-Emergency Generators

	CO_2e
Installed on or before January 1, 2019	### ppm
Installed on or before January 1, 2023	### ppm
Installed after January 1, 2023	< ### ppm

13. 06-096 CMR Ch. 150, § 4(#) is enacted to read:

- #. Greenhouse Gas Emission Standard. No person shall cause or allow the emission of CO_2e from any outdoor wood boiler or outdoor pellet boiler to exceed an average of ### ppm per hour.

14. 06-096 CMR Ch. 164, § 5(11) is enacted to read:

- (11) Notwithstanding any part of this regulation, the owner/operator is subject to the applicable parts of 06-096 CMR Ch. ###, *Greenhouse Gas Emission Standards*.

15. 06-096 CMR Ch. 165, § 4(A) is amended to read:

- A. General Conditions. Notwithstanding any part of this regulation, the owner/operator is subject to the applicable parts of 06-096 CMR Ch. 101, *Visible Emissions*, and 06-096 CMR Ch. ###, *Greenhouse Gas Emission Standards*.

16. 06-096 CMR Ch. 165, § 4(B) is enacted to read:

- Greenhouse gas emissions from the incinerator shall not exceed a limit of CO2e to be determined by the Department in compliance with 06-096 CMR Ch. ###.

17. 06-096 CMR Ch. 305, § 21 is enacted to read:

- **A. Prohibition.** The Department shall not issue a PBR if it is determined that the proposed activity to be permitted will result in emissions of greenhouse gases in excess of #### ppm per [TIME PERIOD].
- **B. Determination.** An estimation of greenhouse gas emissions of the activity to be permitted shall be based on the industry standard emissions, or on the best available science.

18. 06-096 CMR Ch. ###, *Sulfur Hexafluoride Emissions Standards*, is enacted.

AUTHORITY: 38 M.R.S.A., Section 585
38 M.R.S.A., Section 576

EFFECTIVE DATE: **xxxxxx**

C. Sulfur Hexafluoride Emissions Standards

Chapter xxx: SULFUR HEXAFLUORIDE EMISSIONS STANDARDS

SUMMARY: This regulation establishes emissions standards for sulfur hexafluoride from gas-insulated switchgear operators.

A. Purpose. This section seeks to achieve greenhouse gas emission reductions by reducing sulfur hexafluoride (SF_6) emissions from gas-insulated switchgear.

B. Definitions. The definitions of 06-096 CMR Ch. 100 apply to this section. The following terms are defined as the following when they appear in this section. If a term is defined in both 06-096 CMR Ch. 100 and this section, the following definitions apply for this section only.

(1) Active GIS Equipment. Non-hermetically sealed SF_6 gas-insulated switchgear that is:

(a) Connected through busbars or cables to the GIS owner's electrical power system; or

(b) Fully-charged, ready for service, located at the site in which it will be activated, and employs a mechanism to monitor SF_6 emissions.

(c) Active GIS equipment does not include equipment storage.

(2) Electrical Power System. The combination of electrical generators (e.g., power plants), transmission and distribution lines, equipment, circuits, and transformers used to generate and transport electricity from the generators to consumption areas or to adjacent electrical power systems.

(3) Federal Reporting GIS Owner. A GIS Owner who is required to report SF_6 emissions to US EPA pursuant to 40 CFR Part 98, Subpart DD (§ 98.300-308).

(4) Gas-insulated Switchgear (GIS). GIS includes all electrical power system equipment insulated with SF_6 gas. Gas-insulated switchgear or GIS includes switches, stand-alone gas-insulated equipment, and any combination of electrical disconnects, fuses, electrical transmission lines, transformers and/or circuit breakers used to isolate gas-insulated electrical power system equipment

(5) GIS Owner. The person who owns, leases, operates, or controls gas-insulated switchgear used in Maine. GIS owner excludes temporary possession by the following persons:

(a) the original equipment manufacturer during GIS equipment transport and installation at a customer's site; and

(b) a qualified person who hauls the GIS for reuse, recycle or destruction.

(6) Hermetically Sealed Gas-insulated Switchgear. Switchgear that is designed to be gas-tight and sealed for life. This type of switchgear is pre-charged with SF_6, sealed at the factory, and cannot be refilled by its user.

C. Scope and Applicability.

(1) This regulation applies statewide.

(2) Any federal reporting GIS owner is subject to Sections (A) through (H) of this Chapter.

(3) Any GIS owner that is not a federal reporting GIS owner is subject to Sections (A) through (D), (H), and (I), of this Chapter and not subject to Sections (E) through (G) of this Chapter.

D. General Requirements for All GIS Owners.

(1) Any newly manufactured GIS that is placed under the ownership, lease, operation, or control of any GIS owner on or after January 1, 2019 must be represented by the manufacturer to have a 1.0% maximum annual leak rate.

(2) Any GIS owner that places GIS under ownership, lease, operation, or control on or after January 1, 2019 shall comply with any manufacturer-recommended maintenance procedures or industry best practices that have the effect of reducing leakage of SF_6.

(3) If any particular piece of active GIS equipment placed under the ownership, lease, operation, or control of any GIS owner on or after January 1, 2019 does not meet the 1.0%

maximum annual leak rate, the GIS owner shall, by April 15th of the year following the calendar year during which the SF_6 was added, provide documentation to the Department demonstrating compliance with Sections (D)(1) and (2) of this Chapter and describing any additional actions taken or anticipated actions that are expected to reduce the emission rate in the future.

(a) GIS owners shall use data recorded pursuant to Section (G)(2) of this Chapter to determine whether the 1.0% maximum annual leak rate is met.

(b) For the purpose of determining whether GIS meets the 1.0% maximum annual leak rate, GIS owners shall determine an annual average by dividing the amount of SF_6 added to a piece of active GIS equipment by the number of years since the previous addition of SF_6.

(c) For the purpose of determining whether GIS meets the 1.0% maximum annual leak rate, GIS owners may disregard the first time SF_6 is added after the GIS becomes active GIS equipment.

(d) GIS owners may apply the requirements of Section (D)(3) of this Chapter to any group of commonly owned, leased, operated, or controlled pieces of active GIS equipment located in Maine, instead of a single piece of active GIS equipment.

(4) Upon removal of any GIS containing SF_6 from the ownership, lease, operation, or control of a GIS owner, the GIS owner shall provide for the secure storage, re-use, recycling, or destruction of the SF_6.

(5) GIS owners are responsible for compliance with Section (D) of this Chapter with respect to any GIS that is under their ownership, lease, operation, or control in Maine. Documentation provided to GIS owners by qualified persons, such as manufacturers, suppliers, and maintenance contractors, is sufficient to demonstrate compliance with all provisions of Section (D) of this Chapter.

E. Maximum Annual SF_6 Emission Rate. For each calendar year specified below, each federal reporting GIS owner shall ensure that the maximum annual SF_6 emission rate for all of its active GIS equipment, as calculated pursuant to Section (F)(1)(h) of this Chapter, shall not exceed the following:

Maximum Annual SF_6 Emission Rate

Calendar Year	Maximum Allowable SF6 Emission Rate
2019	3.5%
2020	3.0%
2021	2.5%
2022	2.0%
2023	1.5%
2024, and each calendar year thereafter	1.0%

F. Annual Reporting Requirements. Each federal reporting GIS owner must satisfy the annual emissions reporting requirements of 06-096 CMR Ch. 137, *Emission Statements*. SF_6 emissions for active GIS equipment owned, leased, operated, or controlled by the federal reporting GIS owner and located in Maine shall be reported as an annual emission rate, calculated pursuant to Section (F)(1) of this Chapter.

(1) Annual Emission Rate. The annual SF_6 emission rate for active GIS equipment owned, leased, operated, or controlled by the federal reporting GIS owner and located in Maine, calculated by dividing the number of pounds of SF_6 emitted during the year by the nameplate capacity of SF_6-containing active GIS equipment at the end of the year, as calculated pursuant to Section (F)(1)(a)-(b) of this Chapter.

(a) Pounds of SF_6 Emitted. The number of pounds of SF_6 emitted from GIS equipment owned, leased, operated, or controlled by the federal reporting GIS owner and located in Maine during the year, as calculated using the equation specified in 40 CFR § 98.303 and procedures for estimating missing data specified in 40 CFR § 98.305.

(b) Nameplate Capacity. The total nameplate capacity of SF_6-containing active GIS equipment owned, leased, operated, or controlled by the federal reporting

GIS owner and located in Maine at the end of the year, as calculated in a manner consistent with the data reporting requirement specified in 40 CFR § 98.306(a)(1).

G. Monitoring. Q/A, and Recordkeeping Requirements.

(1) All federal reporting GIS owners shall comply with all requirements of 40 CFR § 98.304 and 307 with respect to equipment and containers used in Maine.

(2) All GIS owners shall record, no less than annually, the amount of SF_6 added, if any, to each piece of active GIS equipment that was placed under their ownership, lease, operation, or control on or after January 1, 2019.

(3) All GIS owners shall retain for five years documentation sufficient to demonstrate compliance with this Chapter, and shall provide such documentation to the Department on request. The documentation shall be submitted in a format and within the time limit requested by the Department.

H. Enforcement. The Department shall enforce the requirements of this Chapter in accordance with applicable federal and Maine law, including but not limited to 38 M.R.S. § 349.

AUTHORITY: 38 M.R.S.A., Section 585
38 M.R.S.A., Section 576
EFFECTIVE DATE: **xxxxxx**

V. CONCLUSION

The State of Maine, through the Maine Department of Environmental Protection, has the authority and obligation, pursuant to Maine statutory law, the Maine and United States Constitutions, and the Public Trust Doctrine to implement a strategy to reduce GHG emissions on a trajectory consistent with a goal of reducing the impacts of climate change in Maine. Failure to reduce fossil fuel emissions with great urgency will ensure that Petitioners, youth, and future generations will be forced to confront an inhospitable future in Maine marked by rising seas, mass migrations, food and water shortages, heat waves and droughts, extreme weather events, public health system collapse, and the extinctions of numerous species. Accordingly, Petitioners respectfully request that the Department promulgate the rules requested herein in order to ensure that present and future generations of Mainers, including Petitioners, are able to secure their legal right to a healthy atmosphere and stable climate system and all the other vital natural resources that they depend on for their survival and wellbeing. Petitioners urge the Department to act with a sense of urgency and without delay.