CLIMATE CHANGE AND ENVIRONMENTAL POLICY: AN ANALYSIS OF THE FINAL GUIDANCE ON GREENHOUSE GAS EMISSIONS AND THE EFFECTS OF CLIMATE CHANGE IN NATIONAL ENVIRONMENTAL POLICY ACT REVIEWS

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I. INTRODUCTION

The last three decades have been the warmest years on Earth's surface in over 150 years and likely the warmest consecutive decades in the Northern Hemisphere in the last 1400 years.[1] This period began with an unprecedented increase in atmospheric and oceanic temperatures, on the

[1] INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2014: SYNTHESIS REPORT 2 (Nov. 1, 2014) [hereinafter IPCC REPORT 2014].

heels of a corresponding rise in greenhouse gas emissions.[2] These increasing temperatures caused a decrease in snowfall and ice levels and a rising sea level.[3] Recent anthropogenic emissions of greenhouse gases are the highest in recorded history.[4] Despite scientific consensus that human industrial activity is the primary source of greenhouse gas emissions and that, since the 1950s, those emissions have been the predominant cause of climate change, there is a lack of congressional consensus on how to regulate greenhouse gas emissions.[5]

On August 1, 2016, the Counsel of Environmental Quality (CEQ), a division of the Executive Office of the President, issued a document titled "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews" (the "Guidance").[6] The Guidance provided clarity on the National Environmental Policy Act's (NEPA) requirement to conduct environmental analyses for proposed federal actions by stating how federal agencies should consider greenhouse gas emissions and the effects of climate change.[7] Although the Guidance was not a binding federal regulation, it suggested methods for analyzing greenhouse gas emissions and climate change that would have been consistently implemented by federal agencies.[8] The Guidance sparked headlines such as "From now on, every government agency will have to consider climate

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[2] *Id.*

[3] *Id.*

[4] *Id.*

[5] John Cook et al., *Consensus on Consensus: A Synthesis of Consensus Estimates on Human-Caused Global Warming*, 11 ENVTL. RES. LETTERS (2016). Although the Environmental Protection Agency may now regulate greenhouse gas emissions under the Clean Air Act as the result of *Massachusetts v. EPA*, 549 U.S. 497 (2007), the vast majority of climate change-related legislation passed since the environmental decade of the 1970s pertains to renewable energy tax credits. *See* Emergency Economic Stabilization Act of 2008, Pub. L. No. 110-343, 122 Stat 3765 (2008); Energy Policy Act of 2005, 42 U.S.C. § 15801 (2012); Consolidated Appropriations Act of 2016, Pub. L. No. 114-113, 129 Stat. 2242 (2015); American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009).

[6] Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, 81 Fed. Reg. 51866 (Aug. 5, 2016).

[7] Memorandum from Christina Goldfuss, Council on Envtl. Quality, to the Heads of Fed. Dep'ts & Agencies (Aug. 11, 2016), https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/nepa_final_ghg_guidance.pdf (regarding Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews).

[8] *Id.*

change" and "New climate change policy: Republicans object, Democrats worry."[9]

Then, on March 28, 2017, President Trump issued the "Presidential Executive Order on Promoting Energy Independence and Economic Growth," rescinding the Guidance and other climate change-related regulations.[10] Notwithstanding public perception, it is unclear whether this nonbinding guidance would have compelled federal agencies to uniformly and meaningfully consider greenhouse gas emissions and the effects of climate change. Even more generally, there is the question of whether modifying NEPA could ever impact climate change; would uniform application of NEPA's Guidance have impacted American greenhouse gas emissions and global climate change?[11]

This Note argues that although the Guidance would have caused federal agencies to more consistently contemplate how greenhouse gas emissions affect climate change in NEPA reviews, NEPA's procedural nature suggests that effective regulation of greenhouse gas emissions requires Congress to either amend NEPA or enact more substantive environmental regulations. After reviewing the history of climate change law and some of the psychological impediments to successful climate change regulation, this Note advocates for the implementation of substantive amendments to NEPA's mitigation requirements and the reinstatement of portions of the Guidance.

Part II.A discusses the legal history of the CEQ and NEPA. Part II.B explores the history and mixed success of greenhouse gas and climate change regulations in the United States. Part II.C describes the historical interpretations of climate change and greenhouse gas emissions under NEPA. Part III summarizes the Guidance and the most substantial revisions from its previous iterations. Part IV.A argues that the Guidance fulfilled its purpose of providing clarity to federal agencies on how to consider greenhouse gas emissions and climate change under NEPA. Part IV.B argues that despite the Guidance advising federal agencies how to consider greenhouse gas emissions and climate change under NEPA when proposing major federal action, NEPA's procedural nature suggests that the

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[9] Rowena Lindsay, *New climate change policy: Republicans object, Democrats worry*, CHRISTIAN SCIENCE MONITOR (Aug. 4, 2016), http://www.csmonitor.com/Environment/2016/0804/New-climate-change-policy-Republicans-object-Democrats-worry; Chris Mooney, *From now on, every government agency will have to consider climate change*, WASH. POST (Aug. 2, 2016), https://www.washingtonpost.com/news/energy-environment/wp/2016/08/02/from-now-on-every-government-agency-will-have-to-consider-climate-change/.

[10] Exec. Order No. 13,783, 82 Fed. Reg. 16093 (Mar. 28, 2017).

[11] *See* James R. Holcomb, IV, *NEPA Climate Change: After the CEQ's Draft Guidance*, 41 TEX. ENVTL. L.J. 259, 277 (2011).

law does not provide an adequate incentive to lower greenhouse gas emissions. Part IV.C proposes a NEPA amendment consistent with NEPA's broader mission: "to prevent damage to the environment and stimulate the health of man" by readopting portions of the Guidance that were rescinded and imposing legally enforceable mitigation requirements.

II. LEGAL BACKGROUND

A. *Summary of Procedures Under the National Environmental Policy Act and the Council on Environmental Quality*

NEPA was enacted in 1970 and was one of the first Congressional actions to establish a national framework for protecting the environment.[12] As a result, NEPA is fondly referred to as the 'Magna Carta' of environmental legislation.[13] NEPA's primary purposes are "[t]o declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; . . . and to establish a Council on Environmental Quality."[14] Related legislative history promotes "[a]n independent review of the interrelated problems associated with environmental quality is of critical importance if we are to reverse what seems to be a clear and intensifying trend toward environmental degradation."[15]

The CEQ advises the president on environmental policy and oversees the Office of the Federal Environmental Executive.[16] The CEQ also performs administrative functions, including overseeing federal agency action and compliance with the environmental impact assessment process, resolving federal agency disputes over the adequacy of these assessments, and issuing regulations and other guidance to federal agencies promoting NEPA compliance.[17]

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[12] *Summary of the National Environmental Policy Act*, ENVTL. PROT. AGENCY, https://www.epa.gov/laws-regulations/summary-national-environmental-policy-act (last updated Aug. 24, 2017).

[13] J. Matthew Haws, *Analysis Paralysis: Rethinking the Court's Role in Evaluating EIS Reasonable Alternatives*, 2012 U. ILL. L. REV. 537, 540 (2012) ("Since President Richard Nixon signed NEPA into law on January 1, 1970, the Act has been described as the 'Magna Carta' of environmental legislation.").

[14] National Environmental Policy Act of 1969 § 102, 42 U.S.C. § 4321 (1970).

[15] H.R. REP. NO. 91-378, at 3 (1969) (Conf. Rep.).

[16] *The Council on Environmental Quality*, THE WHITE HOUSE, https://obamawhitehouse.archives.gov/administration/eop/ceq (last visited Jan. 29, 2018).

[17] *Id.*; *What is the National Environmental Policy Act?*, ENVTL. PROT. AGENCY, https://www.epa.gov/nepa/what-national-environmental-policy-act (last updated Jan. 24, 2018).

In 1978, the CEQ issued regulations implementing NEPA and thus requiring environmental analyses for proposed federal actions.[18] The CEQ's NEPA regulations remain binding on all federal agencies and provide for procedural and administrative processes, including the preparation of environmental impact statements (EIS).[19] Many federal agencies have since supplemented the CEQ's NEPA procedures by developing their own NEPA procedures.[20] These agency-specific NEPA procedures are developed in consultation with the CEQ and are tailored to reflect each federal agency's unique mission.[21]

Since the issuance of the initial NEPA regulations, the CEQ also issued guidance on how to properly implement NEPA.[22] The CEQ may issue guidance to recommend best practices for NEPA implementation or to clarify NEPA requirements.[23] Although guidance issued by the CEQ is not legally binding, the Supreme Court has stated on several occasions that the CEQ's interpretation of NEPA is entitled to substantial deference.[24] Substantial deference is generally granted to a federal agency's interpretation of its own statutes or regulations.[25] In *Andrus v. Sierra Club*, the Supreme Court found that the CEQ's interpretation of NEPA is entitled to substantial deference because the CEQ was created by NEPA and is obliged "to review and appraise the various programs and activities of the Federal Government in the light of the policy set forth in . . . this Act . . . , and to make recommendations to the President with respect thereto."[26]

1. An Overview of the Various NEPA Reviews

Pursuant to NEPA, when a federal agency wants to conduct "major federal actions significantly affecting the quality of the human

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[18] *What is the National Environmental Policy Act?*, *supra* note 17.

[19] *Id.*

[20] *Id.*

[21] *Agency NEPA Implementing Procedures,* NAT'L ENVTL. POL'Y ACT, https://ceq.doe.gov/laws-regulations/agency_implementing_procedures.html (last visited Jan. 29, 2018).

[22] *What is the National Environmental Policy Act?*, *supra* note 17.

[23] *See* Memorandum from Christina Goldfuss, *supra* note 7.

[24] Helen Leanne Serassio, *Legislative and Executive Efforts to Modernize NEPA and Create Efficiencies in Environmental Review*, 45 TEX. ENVTL. L.J. 317, 329 n.100 (2015) (citing Andrus v. Sierra Club, 442 U.S. 347, 358 (1979)); *see also* Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 333–34 (1989) (finding that the CEQ regulation regarding reasonably foreseeable environmental impacts is entitled to substantial deference).

[25] Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc., 467 U.S. 837, 842–45 (1984); THOMAS K. RAGLAND, BUSINESS AND COMMERCIAL LITIGATION IN FEDERAL COURTS § 105:13 (Thomson Reuters et al. eds., 4th ed. 2017).

[26] Andrus v. Sierra Club, 442 U.S. 347, 358 (1979) (citing 42 U.S.C. § 4344).

environment" ("Major Federal Action"), the federal agency must issue a detailed environmental statement.[27] This statement must include (1) the environmental impact of the proposed action, (2) any unavoidable adverse environmental effects, (3) alternatives to the proposed action, (4) the relationship between short-term uses and long-term productivity, and (5) any irreversible commitments of resources that would be utilized if the action occurs.[28] The Environmental Protection Agency (EPA) must then review the federal agency's environmental statement and determine the adequacy of the environmental impacts of the proposed federal action.[29]

According to NEPA, federal agencies should integrate the NEPA process into a proposal for Major Federal Action at the earliest possible stage to ensure that the action reflects environmental values and to avoid delays later in the process.[30] Federal agencies are advised to use "a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision-making which may have an impact on man's environment."[31] If a category of Major Federal Action does not cumulatively or individually have a significant effect on the human environment and has been found to have no effect on procedures adopted by the federal agency, then that action is subject to a "categorical exclusion."[32] Actions subject to categorical exclusions do not require an EIS.[33]

If a federal agency determines that an EIS is not required because the Major Federal Action will not significantly affect the quality of the human environment, the agency must prepare a finding of no significant impact (FONSI).[34] A *mitigated* FONSI may also be issued if a federal agency conducts an environmental assessment (EA) and concludes that the proposed action's "significant" effect on the human environment will be mitigated to the point of insignificance.[35]

A less formal EA is prepared if it is unclear whether a federal agency must prepare an EIS.[36] To determine whether a federal agency must

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[27] National Environmental Policy Act of 1969 § 102, 42 U.S.C. § 4332 (2012).

[28] *Id.*

[29] *National Environmental Policy Act,* ENVTL. PROT. AGENCY, https://www.epa.gov/nepa (last updated Oct. 26, 2017).

[30] 40 C.F.R. § 1501.2 (2005).

[31] *Id.*

[32] *Id.* § 1508.4.

[33] *Id.*

[34] *Id.* § 1501.4.

[35] Spiller v. White, 352 F.3d 235 (5th Cir. 2003) (holding that a mitigated FONSI was appropriate for an oil pipeline where the company agreed to limit the environmental effects).

[36] 40 C.F.R. § 1501.4 (2005); MATTHEW BENDER & CO., ENVIRONMENTAL LAW PRACTICE GUIDE § 1.07 (Michael B. Gerrard ed., 2017).

prepare an EIS, the agency should first refer to its own procedures supplementing NEPA regulations.[37] If a proposed Major Federal Action is not discussed in a federal agency's supplemental NEPA regulations, the agency must conduct an EA to determine whether it is necessary to prepare an EIS.[38] An EA is a concise public document that briefly describes the proposed Major Federal Action and determines whether the federal agency must prepare an EIS.[39]

If a categorical exception, FONSI, or mitigated FONSI are not applicable, or an EA concludes than an EIS is required, the federal agency must then conduct an EIS.[40] Once a federal agency determines that it must conduct an EIS, the agency must first commence a "scoping process" to determine the breadth of issues to be identified and addressed pertaining to the proposed action.[41] "Scoping" includes three types of action: (1) connected actions that are closely related, (2) cumulative actions, "which when viewed with other proposed actions have cumulatively significant impacts," and, (3) similar actions, "which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together."[42]

The purpose of an EIS is to serve as an "action-forcing device to insure that the policies and goals defined in [NEPA] are infused into the ongoing programs and actions of the federal government."[43] A federal agency should therefore commence the EIS process whenever the agency is developing a proposal for Major Federal Action.[44] An EIS should then serve as an assessment tool to determine the environmental impact of a proposed Major Federal Action, and not as a justification mechanism for previously made decisions.[45]

An EIS must discuss all significant environmental impacts and inform decision-makers and the public of reasonable alternatives that would otherwise minimize the adverse impacts or enhance the quality of the human environment.[46] These adverse impacts may include cumulative impacts, direct effects, and indirect effects.[47] Cumulative impacts measure

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[37] 40 C.F.R. § 1501.3 (2005).

[38] *Id.* § 1501.4.

[39] *Id.* § 1508.9.

[40] *Id.* § 1501.4.

[41] *Id.* § 1501.7.

[42] *Id.* § 1508.25.

[43] *Id.* § 1502.1.

[44] *Id.* § 1502.5.

[45] *Id.* § 1502.2.

[46] *Id.*

[47] *Id.* § 1508.8 (stating that "[e]ffects" and "impacts" are synonymous for the purpose

the total impact of incremental environmental impacts from the proposed action and the "past, present, and reasonably foreseeable future actions," regardless of the actor.[48] Direct effects are those effects immediately caused by the proposed action.[49] In contrast, indirect effects are caused by the proposed action and occur in a reasonably foreseeable time or distant location.[50]

The "heart of the EIS" outlines alternatives to the proposed action.[51] Based on the analysis of the proposed action and its potential effects, an EIS should provide alternative courses of action with a "clear basis for choice among options."[52] All reasonable alternatives must be "rigorously explore[d] . . . , objectively evaluate[d]," and compared on the merits.[53] Each EIS must include the alternative of "no action."[54] If mitigation is not explicitly discussed as a part of the proposed action or alternatives, mitigation measures should also be included in an EIS.[55] Mitigation can include (1) taking no action, (2) taking only partial action, (3) minimizing impacts of the proposed action by rehabilitating or restoring the affected environment, (4) reducing the impact of the proposed action over a period of time by performing preservation operations, or (5) compensating for the impact of the proposed action by providing alternative resources or environments.[56]

In sum, NEPA is a complex process that requires federal agencies to determine whether a proposed Major Federal Action has a significant effect on the human environment. Under NEPA, a federal agency that wants to conduct a Major Federal Action must issue a categorical exception, a (mitigated) FONSI, an EA, or an EIS for a proposed action, the last of which requires the federal agency to expend considerable resources conducting an environmental analysis. An EIS, the most formal and elaborate procedure, requires consideration of direct and indirect effects, cumulative impacts, alternatives to the proposed action, and mitigation measures. Although this Note largely discusses climate change in the context of "NEPA reviews," the analysis and criticism mostly relate to the context of an EIS.

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of NEPA).

[48] *Id.* § 1508.7.

[49] *Id.* § 1508.8.

[50] *Id.*

[51] *Id.* § 1502.14.

[52] *Id.*

[53] *Id.*

[54] *Id.*

[55] *Id.*

[56] *Id.* § 1508.20.

2. Criticisms of the National Environmental Policy Act: The Purely Procedural Nature and Inefficiencies of the National Environmental Policy Act

Despite NEPA's ambitious purpose, including "promot[ing] efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man," there are several shortcomings.[57] The most commonly identified shortcoming is NEPA's lack of substantive force, as compliance with NEPA does not require a particular environmental outcome.[58] The notion that NEPA is a purely procedural statute was first discussed in *Strycker's Bay Neighborhood Council, Inc. v. Karlen.*[59] In *Strycker's Bay,* the U.S. Department of Housing and Urban Development (HUD) conducted an EIS and then approved a project to build low-income housing in Manhattan.[60] HUD ultimately decided that the location was acceptable for the project because relocation would result in "unacceptable delay."[61] The Supreme Court held that the rationale for this decision was sufficient because NEPA does not impose a substantive environmental duty on federal agencies, but merely requires "a fully informed and well-considered decision."[62] Therefore, although NEPA imposes an obligation on federal agencies to conduct the requisite environmental analysis and review alternatives prior to executing a proposed project, NEPA does *not* require a federal agency to select the most environmentally-conscious alternative after completion of the environmental analysis process.[63] *Strycker's Bay* solidified the procedural limitations of NEPA by concluding that agencies are not restricted by the consideration of environmental consequences in deciding to pursue a proposed action.[64]

NEPA's lack of a substantive enforcement mechanism gives rise to further criticism of NEPA's practical application. Under NEPA, federal agencies must utilize limited time and resources to compile a significant amount of information about the environmental impacts of their proposed

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[57] National Environmental Policy Act of 1969 § 102, 42 U.S.C. § 4321 (1970).

[58] *Id.*; Vermont Yankee Nuclear Power Corp. v. Nat. Res. Def. Council, Inc., 435 U.S. 519, 549–58 (1978) (holding that "impos[ing] upon the agency its own notion of which procedures are 'best' or most likely to further some vague, undefined public good" exceeds the limits of judicial review of agency action); Alyson C. Flournoy, Heather Halter & Christina Storz, *Harnessing the Power of Information to Protect Our Public Natural Resource Legacy*, 86 TEX. L. REV. 1575, 1580 (2008).

[59] Strycker's Bay Neighborhood Council, Inc. v. Karlen, 444 U.S. 223, 227 (1980).

[60] *Id.* at 223–25.

[61] *Id.* at 226.

[62] *Id.* at 227.

[63] *Id.*

[64] *Id.* at 227–28.

actions in order to satisfy NEPA's procedural requirements.[65] As challenges to NEPA compliance tend to focus on the adequacy of underlying documentation and the information contained therein, NEPA analyses and particularly EISs, tend to be "overly lengthy documents."[66] This obligation to prepare a lengthy environment analysis would not in itself be a criticism of NEPA, however, the preparing agency is only required to *consider* the collected information in making the final decision regarding its proposed action.[67] As there is no requirement imposed on federal agencies to do more than simply consider the large amount of information compiled under NEPA, "[t]he means have become ends in themselves."[68]

Furthermore, in some cases agency decision-makers may not consider the alternatives provided in an EIS until they have already made the final decision about a proposed course of action.[69] This process ultimately undermines a key objective of NEPA: to inform federal agency decision-making of the environmental impacts of a proposed action.[70] A comprehensive EIS can delay completion of NEPA's procedural requirement because of the extensive time required to prepare an EIS.[71] As a result, essential decision-makers may not review the EIS early enough in the federal agency's decision-making process in order to influence the ultimate outcome.[72]

Another significant shortcoming of NEPA is the narrow focus of the information collected in an EIS and its consequential use.[73] Although there is an incentive to properly conduct an EIS and compile a large amount of information regarding the proposed action, namely to avoid future litigation, the resources devoted to conduct an EIS and the information collected are rarely used effectively thereafter.[74] As NEPA analyses are conducted in order to "permit, fund or undertake a *singular* proposed action," there is no incentive for federal agencies to present the information

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[65] Flournoy, Halter & Storz, *supra* note 58, at 1582–83.

[66] *Id.*

[67] *Id.*

[68] Paul J. Culhane, *NEPA's Effect on Agency Decision Making: Article: NEPA's Impacts on Federal Agencies, Anticipated and Unanticipated*, 20 ENVTL. L. 681, 700 (1990).

[69] Flournoy, Halter & Storz, *supra* note 58, at 1583 ("Delays increase the risk that a particular project alternative and design may become entrenched in decision makers' and proponents' minds before the EIS or EA is complete, and thus before the complete range of alternatives and impacts are fully developed.").

[70] *Id.*

[71] *Id.*

[72] *Id.*

[73] *Id.*

[74] *Id.*

collected in such a way as to promote the future use of the information for other projects or in other contexts entirely.[75] As a result, the information compiled is not presented in a "widely usable format."[76]

In addition, there is no post-decision monitoring of mitigation measures under NEPA.[77] Whereas some mitigation measures are provided in an EIS as recommendations (i.e., preservation operations, compensation for the impact by providing alternative resources or environments), other mitigation measures may allow a federal agency to avoid preparation of an EIS altogether by issuing a mitigated FONSI instead.[78] The lack of mandatory enforcement makes this practice highly controversial and is largely considered a "missing component" of NEPA enforcement.[79] Issuing a mitigated FONSI allows a federal agency to sidestep the requirement of completing an EIS without later demonstrating compliance with the proposed mitigation measures.[80]

Overall, the purely procedural nature and narrowness of a federal agency's obligations under NEPA to consider an EIS at the point of decision-making does not justify the burden of compiling such comprehensive environmental data for Major Federal Action.

B. *The History of Federal Greenhouse Gas and Climate Change Regulations*

1. The Mixed Success of Congressional Regulation of Greenhouse Gas Emissions and Climate Change

Concern for climate change and the effects of greenhouse gas emissions is not a recent phenomenon. Since the First Annual Report of the CEQ in 1970, there have been claims that "[m]an may be changing his weather."[81] However, these concerns have not led to a unified approach to climate change regulation and as a result, many proposed bills regarding the regulation of greenhouse gas emissions and climate change fail to receive sufficient congressional support to become laws.[82] In 2003 and 2005, the

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[75] *Id.* (emphasis added).

[76] *Id.*

[77] *Id.*

[78] *Id.* at 1584–85.

[79] *Id.*

[80] *Id.* at 1585.

[81] *See* 116 CONG. REC. 32,914 (1970) (statement by Sen. Boggs that "[a]ir pollution alters the climate and may produce global changes in temperature"); COUNCIL FOR ENVTL. QUALITY, ENVIRONMENTAL QUALITY: THE FIRST ANNUAL REPORT OF THE COUNCIL OF ENVIRONMENTAL QUALITY 93 (1970).

[82] Mass. v. EPA, 549 U.S. 497, 500 (2007).

McCain-Lieberman Climate Stewardship Act was proposed in the Senate.[83] The 2003 version of the bill would have capped 2010 carbon dioxide emissions, with exemptions provided for those areas in which this was deemed "not feasible."[84] Approximately 85% of the United States' emissions would have been covered by this bill.[85] The 2005 version of the bill was similar, but also required the federal government to lead the research and commercialization of new energy technologies.[86] This bill would have also provided for the trade of emission allowances.[87] Both bills died on the floor because they did not receive the requisite number of votes.[88]

In 2007, the Global Warming Pollution Reduction Act bill was proposed in the Senate.[89] This bill intended to reduce greenhouse gas emissions, increase performance standards for electricity generation and motor vehicles, and provide an optional emissions "cap and trade" system.[90] The bill would have also provided funding for research and development on related topics, such as carbon capture and sequestration.[91] This bill died in committee.[92]

In 2009, the American Clean Energy and Security Act ("ACES") bill was

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[83] McCain-Lieberman Climate Stewardship Act of 2005, S. 1151, 109th Cong. (2005) (bill was introduced in the Senate on May 26, 2005 and referred to the Senate Committee on Environment and Public Works); McCain-Lieberman Climate Stewardship Act of 2003, S. 139, 108th Cong. (2003) (bill was introduced in the Senate on January 9, 2003 and re-referred to the Senate Committee on Environment and Public Works by unanimous consent on October 30, 2003).

[84] *Summary of the Lieberman-McCain Climate Stewardship Act of 2003*, CTR. FOR CLIMATE & ENERGY SOLUTIONS, https://www.c2es.org/federal/congress/108/summary-mccain-lieberman-climate-stewardship-act-2003 (last visited Apr. 19, 2017).

[85] *Id.*

[86] *Summary of McCain-Lieberman Climate Stewardship and Innovation Act of 2005,* CTR. FOR CLIMATE & ENERGY SOLUTIONS, https://www.c2es.org/federal/congress/109/summary-mccain-lieberman-climate-stewardship-innovation-act-2005 (last visited Apr. 19, 2017).

[87] *Id.*

[88] McCain-Lieberman Climate Stewardship Act of 2005, S. Amdt. 826 to H.R. 6, 109th Cong. (2005); Climate Change Stewardship Act, S. 139, 108th Cong. (2003).

[89] Global Warming Pollution Reduction Act of 2007, S. 309, 110th Cong. (2007) (bill was introduced in the Senate on January 16, 2007 and the last recorded action was "sponsor introductory remarks on measure" on June 13, 2007).

[90] *Bills of the 110th Congress Concerning Climate Change*, CTR. FOR CLIMATE & ENERGY SOLUTIONS, https://www.c2es.org/federal/congress/110/climate-change-legislative-proposals (last visited Apr. 19, 2017).

[91] *Id.*

[92] S. 309.

approved by the House of Representatives and sent to the Senate.[93] ACES sought to establish a nationwide greenhouse gas "cap and trade" system and other complementary climate and energy policy measures.[94] However, ACES failed in the Senate because it was never brought to the floor for discussion or vote.[95]

In 2011, the Sustainable Energy Act bill was proposed in the House of Representatives.[96] This bill intended to eliminate fossil fuel subsidies and remove limited liability grants from oil and gas projects, but died in committee in 2013.[97]

In 2013, the Climate Protection Act was proposed in the Senate.[98] This bill would have imposed a "carbon pollution fee" on manufacturers, producers, and importers of "carbon polluting substance."[99] Its drafters anticipated that the bill would have generated fees approaching $1.2 trillion over ten years, but ultimately the bill failed in committee in 2013.[100]

Congressional failure to regulate greenhouse gas emissions and climate change has not been limited to bills proposing increased regulation. In 2011, the Energy Tax Prevention Act was proposed in the House.[101] This bill would have *prevented* the EPA from regulating greenhouse gas emissions, removed greenhouse gases from the list of air pollutants regulated under the Clean Air Act, and repealed all actions relating to climate change.[102] However, this bill also died in committee.[103]

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[93] American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. (2009) (bill passed in the House on June 26, 2009 and the last recorded action was "placed on Senate Legislative Calendar under General Orders" on July 7, 2009).

[94] H.R. 2545 § 861.

[95] *Id.*

[96] Sustainable Energy Act of 2011, H.R. 910, 112th Cong. (2011) (bill passed in the House on April 7, 2011 and was referred to the Senate Committee on Environment and Public Works on April 8, 2011).

[97] *Id.*; *Bills of the 113th Congress Concerning Climate Change*, CTR. FOR CLIMATE & ENERGY SOLUTIONS, https://www.c2es.org/federal/congress/113/climate-change-legislative-proposals (last visited Apr. 19, 2017).

[98] Climate Protection Act of 2013, S. 332, 113th Cong. (2013) (bill was introduced in the Senate on February 14, 2013 and referred to the Senate Committee on Environment and Public Works).

[99] *Summary of The Climate Protection Act of 2013*, CTR. FOR CLIMATE & ENERGY SOLUTIONS, https://www.c2es.org/publications/summary-climate-protection-act-2013-s-332 (last visited Apr. 19, 2017).

[100] *Id.*; S. 332.

[101] Energy Tax Prevention Act of 2011, H.R. 910, 112th Cong. (2011) (bill was introduced in the House on March 3, 2011 and referred to the House Committee on Environment and Public Works).

[102] Jason Ye, *Hearing on the Energy Tax Prevention Act: Truth vs. Fiction*, CTR. FOR CLIMATE & ENERGY SOLUTIONS (Feb. 18, 2011), https://www.c2es.org/blog/yej/hearing-

Despite this extensive list of unsuccessful congressional bills regarding the regulation of greenhouse gas emissions and climate change, some climate change-related bills passed Congress and were signed into law. On December 19, 2007, former President Bush signed into law the Energy Independence and Security Act of 2007.[104] The Act established a Corporate Average Fuel Economy (CAFE) standard of 35 miles per gallon by 2020 and increased the supply of alternative fuel sources by requiring greater consumption of biofuel.[105] Additionally, the Act provided energy efficiency standards for both buildings and appliances.[106] In 2010, the EPA and the National Highway Traffic Safety Administration passed "2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards," adopting greenhouse gas emission and fuel economy standards for passenger vehicles.[107] In 2012, this Act was renewed to apply to vehicle model years 2017 through 2025.[108]

In sum, the mixed success of congressional regulation of greenhouse gas emissions and climate change is not easily attributable to one particular factor. The history of congressional attempts to regulate climate change and greenhouse gas emissions highlights the difficulty in passing any federal environmental regulation, regardless of the underlying political stance.

2. *Massachusetts v. EPA* and the Clean Power Plan

Although concerns about climate change have not led to a unified regulatory approach, courts have started to recognize the magnitude of this issue.[109] In the landmark case *Massachusetts v. EPA*, the Supreme Court declared that greenhouse gases are "air pollutants" subject to regulation under the Clean Air Act.[110] In *Massachusetts v. EPA*, a number of states and environmental organizations filed a rulemaking petition for the EPA to

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energy-tax-prevention-act-truth-vs-fiction.

[103] H.R. 910.

[104] Energy Independence and Security Act of 2007, 42 U.S.C. § 17001 (2012).

[105] *Id.*

[106] *Id.*

[107] Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, 75 Fed. Reg. 25324 (May 7, 2010).

[108] 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 77 Fed. Reg. 62624 (Oct. 15, 2012).

[109] The last Congressional act enacted to explicitly regulate "manmade pollution" that may be producing "long-term and substantial increase[s] in the average temperature on Earth" was the Global Climate Protection Act, Pub. L. No. 100-204, §§ 1101-06, 101 Stat. 1331, 1408 (codified as amended at 15 U.S.C. § 2901 (2006)).

[110] Massachusetts v. EPA, 549 U.S. 497, 528 (2007).

regulate greenhouse gas emissions from new motor vehicles.[111] The EPA denied the petition, relying largely on a report by the National Research Council.[112] This report stated that there were uncertainties regarding the link between increasing global temperatures and the buildup of greenhouse gases in the atmosphere.[113] When the EPA denied the petition, the petitioning parties sought judicial review.[114] The Court ultimately found that the Clean Air Act gives the EPA authority to regulate greenhouse gas emissions because they "fit well within the Clean Air Act's capacious definition of air pollutant."[115] This decision provided the EPA explicit authority to regulate greenhouse gases as air pollutants under the Clean Air Act.[116]

Former President Obama used the Supreme Court's ruling in *Massachusetts v. EPA* to "pave the way" for federal climate change regulation.[117] The Clean Power Plan, a rule issued by the EPA, was jointly announced by former President Obama and the EPA on August 3, 2015 and intended to cut carbon pollution from existing power plants.[118] This historic rule sought to provide "national consistency, accountability and a level playing field while reflecting each state's energy mix."[119] The Clean Power Plan was the first regulation to set a national limit on carbon pollution produced from existing power plants.[120]

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[111] Plaintiffs included Massachusetts, California, Connecticut, Illinois, Maine, New Jersey, New Mexico, New York, Oregon, Rhode Island, Vermont, Washington, the District of Columbia, American Samoa Government, New York City, the Mayor and City Council of Baltimore, Center for Biological Diversity, Center for Food Safety, Conservation Law Foundation, Environmental Advocates, Environmental Defense, Friends of the Earth, Greenpeace, International Center for Technology Assessment, National Environmental Trust, Natural Resources Defense Council, Sierra Club, Union of Concerned Scientists, and U.S. Public Interest Research Group. *Id.* at 510.

[112] *Id.* at 513.

[113] *Id.* at 497.

[114] *Id.*

[115] *Id.* at 500.

[116] Keith Goldberg, *5 Decisions That Paved The Way For The Clean Power Plan,* LAW360 (Sept. 9, 2016, 7:53 PM), http://www.law360.com/articles/838334/5-decisions-that-paved-the-way-for-the-clean-power-plan.

[117] *Id.*

[118] Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64662 (Oct. 23, 2015).

[119] *Clean Power Plan for Existing Power Plants,* ENVTL. PROT. AGENCY, https://archive.epa.gov/epa/cleanpowerplan/clean-power-plan-existing-power-plants-regulatory-actions.html (last updated Jan. 12, 2017).

[120] *FACT SHEET: Overview of the Clean Power Plan,* ENVTL. PROT. AGENCY, https://19january2017snapshot.epa.gov/cleanpowerplan/fact-sheet-overview-clean-power-plan_.html (last updated June 27, 2016).

The historic climate change rule has been met by a staunch resistance and is currently in a state of uncertainty as the Supreme Court stayed implementation pending judicial review by the Court of Appeals for the D.C. Circuit.[121] On March 28, 2017, President Trump signed an executive order directing Scott Pruitt, current Administrator of the EPA, to "review" the Clean Power Plan.[122] Then on October 16, 2017, the EPA announced that it will engage in formal notice-and-comment rulemaking in order to repeal the existing rule.[123]

3. The Psychology of Climate Change and Rationalization for the Lack of Successful Federal Regulation

The threat of climate change is difficult to regulate in part because of psychological phenomena that prevent society from effectively responding to the threat.[124] Climate change is a textbook example of the tragedy of the commons.[125] The "tragedy of the commons" theory states that every individual pursues his or her own best interest to the detriment of common resources.[126] Climate change is the result of a buildup of greenhouse gases in the atmosphere, otherwise known as a common resource.[127] Everyone on earth utilizes the atmosphere, or "commons," with each nation expelling greenhouse gases as a side effect of its economic, anthropogenic activities.[128] The overuse by rational actors (nations) of the commons (the atmosphere) results in a buildup of greenhouse gases, ultimately contributing to climate change and warmer temperatures, more frequent and

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[121] Jonathan H. Adler, *The en banc D.C. Circuit meets the Clean Power Plan*, WASH. POST (Sept. 28, 2016), https://www.washingtonpost.com/news/volokh-conspiracy/wp/2016/09/28/the-en-banc-d-c-circuit-meets-the-clean-power-plan/?utm_term=.d6224538e661; *Clean Power Plan for Existing Power Plants: Regulatory Actions,* ENVTL. PROT. AGENCY, https://archive.epa.gov/epa/cleanpowerplan/clean-power-plan-existing-power-plants-regulatory-actions.html (last updated Jan. 12, 2017) (Although all five conservative justices on the Supreme Court supported the stay, a stay is not a judgment on the merits of the case); Jon D. Sohn & Andrew Shaw, *DC Circ. Sets Up Uncertain Fate for The Clean Power Plan,* LAW360 (Aug. 2, 2016, 11:11 AM), https://www.law360.com/articles/822736/dc-circ-sets-up-uncertain-fate-for-the-clean-power-plan?article_related_content=1).

[122] Exec. Order No. 13,783, 82 Fed. Reg. 16093 (Mar. 28, 2017).

[123] Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 82 Fed. Reg. 48035 (Oct. 16, 2017).

[124] Jeffrey J. Rachlinkski, *The Psychology of Global Climate Change*, 2000 U. ILL. L. REV. 299, 299 (2000).

[125] Kirsten H. Engel & Scott R. Saleska, *Subglobal Regulation of the Global Commons: The Case of Climate Change*, 32 ECOLOGY L.Q. 183, 190 (2005).

[126] Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243, 1244 (1968).

[127] Engel & Saleska, *supra* note 125.

[128] *Id.*

violent storms, and the disruption of ecosystems.[129] Although the United States endures indirect negative utility from over-consuming fossil fuels, it is not incentivized to reduce its greenhouse gas emissions because a unilateral emissions reduction would simply decrease the benefits received from utilizing the commons.[130]

The tragedy of the commons theory may explain the lack of historical regulation of climate change, but other psychological factors, such as loss aversion, may still impede the implementation of successful climate change regulation. Loss aversion is the concept that people become attached to the status quo and treat potential losses as more significant than potentially equivalent gains.[131] As a result, people are more willing to make riskier choices and avoid potential loss when faced with the dilemma of modifying the status quo.[132] In addition to the personal application of loss aversion, loss aversion may also impact societal choices regarding environmental quality, including those pertaining to climate change.[133]

Loss aversion explains the dichotomy between the burst of environmental regulations in the 1970s and the current inability to successfully regulate greenhouse gas emissions and climate change.[134] In the 1970s, public concern about environmental degradation, including the Santa Barbara oil spill and Ohio's Cuyahoga River catching fire, led to the enactment of environmental regulation.[135] The clear loss of the Santa Barbara coastal habitat and the use of Ohio's river resulted in demands to restore *lost* environmental quality, instead of *improve* upon the existing environmental quality.[136] Climate change, in contrast, is not tangible like an oil spill or a

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[129] *Id.*

[130] *Id.* at 190–91.

[131] Rachlinkski, *supra* note 124, at 307.

[132] *Id.*

[133] *Id.* Studies have found that people are more willing to tolerate increased risk at no cost than pay for reduced risk. *Id.* at 308. *See* Robin Gregory et al., *The Role of Past States in Determining Reference Points for Policy Decisions*, 55 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 195, 200 (1993) (finding that subjects thought it was more important to restore lost environmental quality than to improve the present state and as a result, subjects were more inclined to approve of programs that restored environmental quality over programs that improved environmental quality); W. Kip Viscusi & Wesley A. Magat, *An Investigation of the Rationality of Consumer Valuations of Multiple Health Risks*, 18 RAND J. ECON. 465, 474–76 (1987) (finding that subjects were more willing to accept increases in risk for lower cost household products than increases in cost for safer household products).

[134] Rachlinkski, *supra* note 124, at 306.

[135] *Id. See also* Veronica DeVore, *Earth Day Coincides with Heated Debates Over Environmental Rules*, PBS (Apr. 11, 2011), http://www.pbs.org/newshour/extra/2011/04/earth-day-coincides-with-heated-debates-over-environmental-rules/.

[136] Rachlinkski, *supra* note 124, at 308.

river on fire, and therefore is more difficult to comprehend outside of scientific theory.[137] This results in an incentive to make riskier choices regarding climate change regulations in order to maintain the status quo.[138]

Although there is sufficient scientific data to prove that greenhouse gas emissions are a significant cause of climate change and therefore require heftier regulation, the lack of a clear and obvious loss to individuals indicates that regulation of climate change by means of restricting greenhouse gas emissions will continue to face staunch resistance.

C. *Historical Considerations of Greenhouse Gas Emissions and Climate Change under NEPA by the Courts and the CEQ*

1. Judicial Interpretation and Consideration of Greenhouse Gas Emissions and Climate Change as a "Significant" Impact under NEPA

The question of whether environmental analyses under NEPA require consideration of greenhouse gas emissions and climate change has been a question for almost three decades.[139] In *City of Los Angeles v. National Highway Traffic Safety Administration*, the D.C. Circuit addressed whether a modification to lower the CAFE standard, and its consequential impact on climate change, constituted a significant impact under NEPA, thus requiring an EIS.[140] The D.C. Circuit ultimately held that a one-mile per gallon change in the CAFE standard was not significant enough to require an EIS.[141]

Confusion about the consideration of greenhouse gas emissions and climate change under NEPA continued after *City of Los Angeles*. Three years later, in *Border Power Plant Working Group v. Department of Energy*, a district court in California found that the construction of transmission lines to carry electricity from power plants *did* require consideration of carbon dioxide emissions under NEPA.[142] That same year, in *Mid States Coalition for Progress v. Surface Transportation Board*, the Eighth Circuit held that climate change impacts must be considered under NEPA.[143] In that case, a rail line bringing coal from mines to power plants

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[137] *Id.* at 306.

[138] *Id.* at 309–10.

[139] City of Los Angeles v. Nat'l Highway Traffic Safety Admin., 912 F.2d 478 (D.C. Cir. 1990), *overruled by* Florida Audubon Soc. v. Bentsen, 94 F.3d 658 (D.C. Cir. 1996).

[140] *Id.* at 482–83.

[141] *Id.* at 490.

[142] Border Power Plant Working Grp. v. Dep't of Energy, 260 F. Supp. 2d 997, 1028–29 (S.D. Cal. 2003).

[143] Mid States Coal. for Progress v. Surface Transp. Bd., 345 F.3d 520, 533–34 (8th Cir. 2003).

was ordered to supplement its EIS with a Supplemental EIS (SEIS) to consider the potential increase in air emissions, including carbon dioxide emitted from the power plants.[144]

More recently, in November 2007, the Ninth Circuit issued an important decision in *Center for Biological Diversity v. National Highway Traffic Safety Administration.*[145] The court held that under NEPA, the National Highway Traffic Safety Administration (NHTSA) must examine the cumulative impacts of the CAFE standard on greenhouse gas emissions and that "[t]he impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impact analysis that NEPA requires agencies to conduct."[146] On remand, the court instructed the NHTSA to prepare a revised EA or a complete EIS assessing both the carbon dioxide emissions attributable to the new standards and the environmental effects associated with climate change.[147]

Although *Center for Biological Diversity* and *Mid States Coalition for Progress* suggest that NEPA implicates climate change contemplation, courts have also deferred to minimal evaluations of climate change under NEPA.[148] Two years after the Ninth Circuit decided *Center for Biological Diversity*, the Ninth Circuit held that an EIS for a logging project that prescribed burning did *not* violate NEPA, despite its failure to discuss the project's impact on climate change.[149] In reaching this decision, the court considered guidance that suggested the incorporation of climate change into a NEPA analysis for projects that burn more than 30,000 acres of pine.[150] The court held that no discussion of global warming was necessary under NEPA if the impacts were of a "minor scale [so] that the direct effects would be meaningless."[151]

This inconsistent consideration of greenhouse gas emissions and climate change under NEPA by federal agencies and the courts alike illuminates the confusion that stems from attempting to determine which effects must be considered in an EIS. Although courts generally agree that climate change

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[144] *Id.* at 549 (on remand, the Surface Transportation Board extensively discussed the "reasonably foreseeable significant adverse effects" on air quality that may result from the project).

[145] Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin., 538 F.3d 1172 (9th Cir. 2008).

[146] *Id.* at 1216–17.

[147] *Id.* at 1220.

[148] *See* Hapner v. Tidwell, 621 F.3d 1239, 1245 (9th Cir. 2010) (holding that a substantive climate change analysis is not necessary in proportion to the project's size and impact on global warming).

[149] *Id.*

[150] *Id.*

[151] *Id.*

should be considered under NEPA, discrepancies still exist regarding the requisite degree of detail in these analyses and the threshold emissions limit.

2. A Brief History of the CEQ's Consideration of Greenhouse Gas Emissions and Climate Change under NEPA

In 2008, several environmental groups filed a rulemaking petition, requesting that the CEQ clarify NEPA procedures to directly address how federal agencies should consider climate change impacts.[152] Although the CEQ ultimately denied the 2008 petition, on February 18, 2010, the CEQ issued draft guidance on the consideration of climate change under NEPA (the "2010 Draft Guidance").[153] The 2010 Draft Guidance noted that scrutiny of climate change under NEPA is not a new concept, but rather "a potentially important factor to be considered within the existing NEPA framework."[154]

On December 18, 2014, the CEQ released the Revised Draft Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews (the "2014 Draft Guidance").[155] The 2014 Draft Guidance stated that NEPA reviews would now consider both "the potential effects of a proposed action on climate change as indicated by its greenhouse gas emissions" and "the implications of climate change for the environmental effects of a proposed action."[156] It also stated that federal agencies would contemplate both direct and indirect effects of climate change.[157] Direct climate change effects include greenhouse gas emissions from activities that have a reasonably close causal relationship to the Major Federal Action, such as

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[152] International Center for Technology Assessment, Natural Resources Defense Council & Sierra Club, *Petition Requesting that the Council on Environmental Quality Amend its Regulations to Clarify that Climate Change Analyses be Included in Environmental Review Documents*, CENTERFORFOODSAFETY.ORG (Feb. 28, 2008), http://www.centerforfoodsafety.org/files/ceq-petition-final-version-2-28-08_86801.pdf.

[153] National Environmental Policy Act (NEPA) Draft Guidance, "Consideration of the Effects of Climate Change and Greenhouse Gas Emissions," 75 Fed. Reg. 8046 (Feb. 23, 2010).

[154] Memorandum from Nancy H. Sutley, Chair, Council on Envtl. Quality, to Heads of Fed. Dep'ts. and Agencies, (Feb. 18, 2010), https://energy.gov/sites/prod/files/CEQ_Draft_Guidance-ClimateChangeandGHGemissions-2.18.10.pdf.

[155] Revised Draft Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews, 79 Fed. Reg. 77802 (Dec. 24, 2014) [hereinafter Revised Draft Guidance on Greenhouse Gas Emissions and Climate Change].

[156] *Id.* at 77824.

[157] *Id.* at 77825.

those that may occur as a predicate to the agency action (often referred to as *upstream emissions*) and as a consequence of the agency action (often referred to as *downstream emissions*).[158]

Comments submitted during the notice-and-comment period of the 2014 Draft Guidance also emphasized "that the Revised Draft Guidance [does] *not* direct agencies to expand their NEPA analyses to consider the impacts of wide-ranging upstream and downstream activities that are neither causally related to the proposed action nor reasonably foreseeable."[159] Lastly, the 2014 Draft Guidance set a threshold of 25,000 metric tons of carbon dioxide emissions for determining whether to prepare a quantitative analysis of greenhouse gas emissions under NEPA.[160] The 2014 Draft Guidance stated that this threshold was appropriate in light of the availability of quantification tools.[161]

In sum, although the CEQ ultimately denied the 2008 petition that sought clarification on how to address climate change considerations under NEPA, the CEQ acknowledged the inconsistent consideration of greenhouse gas emissions and climate change by both federal agencies and the courts and therefore decided to issue guidance regarding the consideration of greenhouse gas emissions and climate change under NEPA.

III. SUMMARY OF FINAL GUIDANCE FOR FEDERAL DEPARTMENTS AND AGENCIES ON CONSIDERATION OF GREENHOUSE GAS EMISSIONS AND THE EFFECTS OF CLIMATE CHANGE IN NEPA REVIEWS

In 2016, the CEQ issued the Guidance, the most recent aid to federal agencies in evaluating greenhouse gas emissions and climate change. In particular, the Guidance sought to assist federal agencies in considering proposed federal actions under NEPA.[162] The Guidance utilized longstanding NEPA principles to provide clarity on how federal agencies would address climate change and greenhouse gas emissions in environmental impact assessments.[163] Ultimately, under the Guidance, federal agencies were required to consider: "(1) [t]he potential effects of a

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[158] *Id.* at 77825–26.

[159] Reference from Ann F. Miles, Director, Office of Energy Projects, to Horst Greczmiel, Council on Envtl. Quality (Feb. 23, 2015), https://www.eenews.net/assets/2017/02/23/document_gw_10.pdf.

[160] Revised Draft Guidance on Greenhouse Gas Emissions and Climate Change, *supra* note 155, at 77827.

[161] *Id.* at 77811 ("The revised draft guidance sets forth a reference point of 25,000 metric tons CO2-equivalent GHG emissions on an annual basis below which a quantitative analysis of GHG emissions is not recommended unless quantification is easily accomplished, in light of the availability of quantification tools and appropriate input data.").

[162] Memorandum from Christina Goldfuss, *supra* note 7.

[163] *Id.*

proposed action on climate change as indicated by assessing [greenhouse gas] emissions . . . and, (2) [t]he effects of climate change on a proposed action and its environmental impacts."[164]

A. *Scope of the Proposed Action and Framing the NEPA Review*

As previously mentioned, once a federal agency determines that it must conduct an EIS, the agency must then commence the scoping process.[165] The Guidance did not change the scope of a NEPA review, but rather stated that the scope of a proposed action's assessment would be determined by activities with a "reasonably close causal relationship" to the federal action, including predicates and consequences of the proposed action.[166] This was one of the most notable and controversial changes from the 2014 Draft Guidance, which had required consideration of the impacts of upstream and downstream activities.[167]

Pursuant to the Guidance, the scope of climate change-related issues associated with the proposed action would be determined by factors such as the nature, geographic location, timeframe, and type of proposed action.[168] The CEQ would then defer to the federal agencies in developing their own agency-specific practices, consistent with the Guidance, for framing the NEPA review.[169] According to the Guidance, federal agencies would use the scoping process to determine whether they could incorporate by reference existing greenhouse gas emissions analyses to avoid duplicating efforts.[170] Ultimately, the Guidance intended to provide clarity and consistency regarding the consideration of greenhouse gas emissions and climate change under NEPA.[171] The CEQ advised federal agencies to refer back to the "basic NEPA principles" to determine the parameters of their environment analyses, focusing primarily on "significant potential effects" and conducting "an analysis proportionate to the possible environmental consequences."[172]

1. Greenhouse Gas Emissions Quantification

The "[G]uidance . . . intended to assist federal agencies in disclosing and

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[164] *Id.*

[165] 40 C.F.R. § 1501.7 (2005).

[166] Memorandum from Christina Goldfuss, *supra* note 7.

[167] Revised Draft Guidance on Greenhouse Gas Emissions and Climate Change, *supra* note 155, at 77825–26.

[168] Memorandum from Christina Goldfuss, *supra* note 7.

[169] *Id.*

[170] *Id.*

[171] *Id.*

[172] *Id.*

considering the effects of [greenhouse gas] emissions" for proposed federal actions.[173] As a result, "the [G]uidance [did] not establish any particular quantity of [greenhouse gas] emissions as 'significantly' affecting the quality of the human environment."[174] The use of "significantly" was another drastic change from the 2014 Draft Guidance, which suggested a specific threshold of 25,000 metric tons of carbon dioxide in determining whether proposed projects should have a quantitative analysis of greenhouse gas emissions.[175] In contrast, the Guidance stated that "[t]he *rule of reason* and the concept of proportionality caution against providing an in-depth analysis of emissions regardless of the insignificance of the quantity of [greenhouse gas] emissions that would be caused by the proposed agency action."[176] The Guidance clarified that greenhouse gas emissions from a proposed federal action will never represent more than a "small fraction of global emissions" and as a result, this was "not an appropriate basis for deciding how to consider climate change impacts" under NEPA.[177] Furthermore, the Guidance stated that "these comparisons [were not] an appropriate method for characterizing potential impacts associated with proposed actions" because they did not reveal anything about greenhouse gas emissions.[178] Pursuant to the Guidance, federal agencies would not characterize greenhouse gas emissions as a percentage of global emissions when determining whether to consider climate change impact.[179] Instead, federal agencies would "focus on significant potential effects and conduct an analysis that [was] proportionate to the environmental consequences of the proposed action."[180]

B. *Alternatives and Mitigation Measures*

NEPA is also designed to "provide the public and decision makers with useful information regarding reasonable alternatives and mitigation measures" to a proposed Major Federal Action to decrease the environmental impacts of a proposed action.[181] Therefore, the Guidance also advised that federal agencies consider the extent to which a proposed

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[173] *Id.*

[174] *Id.*

[175] *Compare* Revised Draft Guidance on Greenhouse Gas Emissions and Climate Change, *supra* note 155, at 77807, *with* Memorandum from Christina Goldfuss, *supra* note 7.

[176] Memorandum from Christina Goldfuss, *supra* note 7 (emphasis added).

[177] *Id.*

[178] *Id.*

[179] *Id.*

[180] *Id.*

[181] *Id.*

action would contribute to climate change.[182] In ultimately making a reasoned choice among alternatives and mitigation actions, the Guidance advised that a comparison of alternatives based on greenhouse gas emissions could be useful.[183] As NEPA "does not require [the monetization of] costs and benefits," consideration of costs was not required in considering various alternatives.[184]

The Guidance also discussed greenhouse gas emissions in the context of mitigation.[185] It advised that federal agencies would consider mitigation measures to reduce or mitigate greenhouse gas emissions and climate change effects when possible measures are reasonable and consistent with the purpose of the proposed action.[186] Monitoring of mitigation would then be important to confirm the effectiveness of the mitigation measures in "[reducing] the impacts of a proposed action on affected resources already increasingly vulnerable due to climate change."[187]

The Guidance, while not legally binding, confirmed the application of NEPA to climate change and provided clarity on the consideration of greenhouse gas emissions in a NEPA analysis. Although earlier drafts of guidance provided more concrete guidelines regarding greenhouse gas emission thresholds and the scope of assessment, four years and two drafts later, the Guidance better clarified how a NEPA analysis would be conducted.

IV. ARGUMENT

The Guidance fulfilled its intent to provide clarity to federal agencies on the consideration of greenhouse gas emissions and climate change under NEPA. However, despite the Guidance advising federal agencies on greenhouse gas emissions and climate change considerations, NEPA's inherently procedural nature suggests that the Guidance never could have truly incentivized lower greenhouse gas emissions in its current form. Therefore, in addition to arguing for the reinstatement of the Guidance, I propose an amendment to NEPA in line with NEPA's broader purpose "to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man."[188]

A. *The CEQ Fulfilled its Intent to Provide Clarity to Federal Agencies on*

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182 *Id.*

183 *Id.*

184 *Id.*

185 *Id.*

186 *Compare id., with* 40 C.F.R. § 1508.20 (2005).

187 Memorandum from Christina Goldfuss, *supra* note 7.

188 42 U.S.C. § 4321 (2012).

the Consideration of Greenhouse Gas Emissions and Climate Change Under the National Environmental Policy Act

Overall, the CEQ fulfilled its intent to "assist Federal agencies in their consideration of the effects of greenhouse gas (GHG) emissions and climate change when evaluating proposed Federal actions in accordance with the [NEPA]" by issuing the Guidance.[189] Although the CEQ ultimately did not provide a volumetric greenhouse gas emissions limit to assist in the requisite scoping process, the Guidance used scoping language that was consistent with NEPA's original language and did not expand the scope of a NEPA analysis.[190] The CEQ also clarified how to integrate considerations of greenhouse gas emissions and climate change into mitigation measures and alternatives under NEPA.[191]

1. The CEQ Provided Clarity on the Scope of NEPA Reviews Without Expanding NEPA to Encompass Proposed Actions that Would Not Otherwise be Subject to NEPA

In issuing the Guidance, the CEQ provided clarity on the scoping process without expanding the scope of NEPA by only requiring consideration of activities with a "reasonably close causal relationship" to the federal action.[192] Broad consideration of greenhouse gas emissions, particularly when including the impacts of upstream and downstream activities as suggested in the 2014 Draft Guidance, would have resulted in the analysis of "activities that are neither causally related to the proposed action nor reasonably foreseeable."[193] Therefore, if the 2014 Draft Guidance language had been adopted by the Guidance, the scope of a NEPA review would have been expanded, rather than clarified, to include consideration of actions that are neither connected, cumulative, nor similar to the proposed action. In contrast, the Guidance accurately clarified that "for most Federal agency actions, [the] CEQ does not expect that an EIS would be required based *solely* on the global significance of cumulative impacts of GHG emissions, as it would not be consistent with the rule of reason to require the

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[189] Memorandum from Christina Goldfuss, *supra* note 7.

[190] *Id.*

[191] *Id.*

[192] *Id.*

[193] Comments from Ann F. Miles, Director of Office of Energy Projects, Fed. Energy Regulatory Commission, to Horst Greczmiel, Council on Envtl. Quality (Feb. 23, 2015), https://www.whitehouse.gov/sites/default/files/docs/FERC-Comments-on-CEQ-draft-guidance-on-GHG-emissions-and-climate-change-2-23-15.docx (regarding Revised Council on Environmental Quality Guidance on Considering Greenhouse Gas Emissions and Climate Change) (supporting the Revised Draft Guidance's recognition that greenhouse gas emissions only need to be considered where the upstream or downstream activities have a "reasonably close causal relationship to the proposed action.").

preparation of an EIS for every Federal action that may cause GHG emissions regardless of the magnitude of those emissions."[194]

Rather than expand the scope of NEPA, the Guidance correctly identified greenhouse gas emissions and climate change as *cumulative impacts*, a type of action that is already considered within the scoping process and "results from the incremental impact of the [proposed] action when added to other past, present, and *reasonably foreseeable* future actions."[195] Therefore, the CEQ did not expand NEPA to include proposed actions that would have not otherwise fallen within the scope of NEPA or required an EIS. As the Guidance sought to facilitate federal agency compliance with NEPA and did not intend to provide additional criteria for consideration that would broaden the scope of NEPA, the scoping language satisfied the CEQ's intent because the Guidance clarified the original requirements of scoping under NEPA and correctly brought greenhouse gas emissions and climate change under the classification of cumulative impacts.[196]

Another change in the scoping language from the 2014 Draft Guidance is the omission of a reference point of 25,000 metric tons CO2-equivalent greenhouse gas emissions on an annual basis, or any other volumetric measure, to provide clarity as to what constitutes a potential effect of a proposed action on climate change under NEPA.[197] The omission of a volumetric greenhouse gas emissions limitation failed to provide a hard and fast rule for determining whether certain greenhouse gas emissions are relevant for the purpose of a NEPA analysis. However, the language provided in the Guidance, requiring the scope of review to include "reasonably foreseeable" impacts from the proposed federal action was more aligned and consistent with the original language of cumulative impacts consideration under NEPA.[198] Furthermore, the lack of a volumetric measure prevents quantitative problems such as those litigated in *Hapner v. Tidwell*, namely that there was no consideration of global warming in a NEPA analysis because a project burned less than 30,000 acres.[199] Although a volumetric measure provides a bright line rule in the consideration of greenhouse gas emissions, this measurement would have been both arbitrarily over or underinclusive of actions that may otherwise be determined to have a "reasonably foreseeable" impact on climate

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[194] Memorandum from Christina Goldfuss, *supra* note 7 ("This guidance will facilitate compliance with existing NEPA requirements[.]").

[195] 40 C.F.R. § 1508.7 (2005).

[196] Memorandum from Christina Goldfuss, *supra* note 7

[197] *Compare* Revised Draft Guidance on Greenhouse Gas Emissions and Climate Change, *supra* note 155, at 77807, *with* Memorandum from Christina Goldfuss, *supra* note 7.

[198] Memorandum from Christina Goldfuss, *supra* note 7.

[199] Hapner v. Tidwell, 621 F.3d 1239, 1245 (9th Cir. 2010).

change. Therefore, the Guidance correctly affirmed that greenhouse gas emissions must be subjected to the same consideration as other cumulative impacts under NEPA.

2. The CEQ Also Provided Clarity on the Consideration of Greenhouse Gas Emissions and Climate Change in Mitigation Measures and Alternatives

The CEQ also provided clarification on how to integrate considerations of greenhouse gas emissions and climate change into mitigation measures and alternatives.[200] The CEQ suggested comparing anticipated levels of greenhouse gas emissions for each alternative and mitigation measure to provide useful information and enable the decision-maker to make an informed choice regarding the proposed action.[201] The CEQ also advised that federal agencies consider mitigation measures that reduce or mitigate greenhouse gas emissions and resulting climate change effects.[202] However, the Guidance explicitly states that it "do[es] not require the decision maker to select the alternative with the lowest net level of emissions."[203] Furthermore, the Guidance did not provide an enforcement mechanism for mitigation measures.[204] As a result, federal agencies could still issue a mitigated FONSI, instead of an EIS, without enforceable mitigation requirements. [205] Despite the contradictory notion of requiring consideration of greenhouse gas emissions in alternative and mitigation measures and not enforcing these measures thereafter, the Guidance was consistent with original mitigation requirements under NEPA and therefore correctly provided "guidance" on how to implement NEPA within its existing framework. NEPA does not require federal agencies to select the most environmentally-conscious alternative, nor does it enforce mitigation measures, as reflected in the Guidance, which only intended to clarify a federal agency's obligations under NEPA rather than expand upon them.

Overall, the CEQ fulfilled its objective in issuing the Guidance by assisting federal agencies in considering greenhouse gas emissions and climate change when evaluating proposed actions under NEPA. The Guidance did not intend to provide new objectives or requirements for federal agencies, but rather provided agencies with a "common approach"

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[200] Memorandum from Christina Goldfuss, *supra* note 7.

[201] *Id.* (An "informed choice" still does not require the selection of the most environmentally friendly alternative, or the alternative with the lowest net level of emissions).

[202] *Id.*

[203] *Id.*

[204] *Id.*

[205] *Id.*

for the analysis of proposed actions.[206] Therefore, the Guidance allowed for consistent considerations of greenhouse gas emissions and climate change under NEPA, thus resolving prior issues raised by the courts.[207]

Perhaps even more importantly, the CEQ acknowledged and confirmed in the Guidance that under NEPA, a procedural law that requires federal agencies to consider the environmental implications of their proposed actions, federal agencies must include considerations of greenhouse gas emissions and climate change.[208] However, simply considering climate change will not affect greenhouse gas emissions without a substantive enforcement measure in place.

B. *Despite the Guidance Advising Federal Agencies to Consider Greenhouse Gas Emissions and Climate Change Under NEPA When Proposing Major Federal Action, NEPA's Procedural Nature Means It Cannot Incentivize Lower Greenhouse Gas Emissions in its Current Form*

Although the Guidance fulfilled its objective of providing clarification and a common approach to analyzing greenhouse gas emissions and climate change under NEPA, the Guidance ultimately failed in supporting NEPA's broader purpose of "promot[ing] efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man."[209]

1. The Guidance Does Not Incentivize Federal Agencies to Select an Environmentally-Conscious Alternative or Enforce Mitigation Measures of Greenhouse Gas Emissions or Alleged Mitigated FONSI Under NEPA

NEPA's most commonly identified shortcoming, its lack of a substantive force to require a particular environmental outcome, was further demonstrated by the lack of enforceability in the Guidance.[210] Despite the CEQ's acknowledgment that "[c]limate change is a fundamental environmental issue," an analysis under NEPA still only required "a fully informed and well-considered decision," without any consideration of environmental harms.[211] Therefore, even if an EIS found that a proposed

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[206] *Id.*

[207] *See id.* ("The guidance provides Federal agencies a common approach for assessing their proposed actions, while recognizing each agency's unique circumstances and authorities.").

[208] *See* 40 C.F.R. 1500.1 (2005).

[209] National Environmental Policy Act of 1969 § 102, 42 U.S.C. § 4321 (1970).

[210] *See* Flournoy, Halter & Storz, *supra* note 58, at 1585.

[211] Strycker's Bay Neighborhood Council, Inc. v. Karlen, 444 U.S. 223, 227 (1980);

action emitted a substantially greater amount of greenhouse gas emissions than an alternative, there was still no enforcement mechanism provided under NEPA or the Guidance to require a federal agency to choose the more climate- or environmentally-conscious alternative.

An enforcement mechanism is essential in satisfying NEPA's purpose of eliminating damage to the environment and promoting health because otherwise, federal agencies have no incentive to select the more climate-conscious option under NEPA. As hypothesized by the tragedy of the commons theory, federal agencies have no incentive to select the alternative that will reduce their greenhouse gas emissions and not exploit the atmosphere because agencies cannot pinpoint direct harm incurred as a result of their choices. Rather, the harm incurred is indirect and the actions of a single actor do not significantly increase or diminish the possible degradation of the commons. Therefore, the direct harm of climate change will never outweigh the benefit received by a singular federal agency from over-utilizing the atmosphere.

Furthermore, although the use of aggregate analysis in future NEPA reviews may allow for the consideration of an EIS earlier in the decision-making process, there is still no post-decision monitoring mechanism to confirm mitigation measures are implemented.[212] This "missing component" of NEPA enforcement allows federal agencies to diminish greenhouse gas emissions in order to issue a mitigated FONSI without ever following procedures or enduring the legal consequences.[213] Federal agencies should be required to either complete a full EIS or fulfill *enforceable* mitigation measures if they would like to issue a mitigated FONSI.

Although the Guidance addresses some of the common criticisms of NEPA, such as the cost of a scientific analysis and the narrow use for information obtained from an EIS after the process is complete, the Guidance is still a supplement to a procedural law without any substantive legal enforcement.[214] In order for NEPA to truly fulfill its purpose of "promot[ing] efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man," NEPA must require an additional enforcement mechanism.[215]

Memorandum from Christina Goldfuss, *supra* note 7.

[212] Flournoy, Halter & Storz, *supra* note 58, at 1584.

[213] *Id.* at 1585.

[214] *Strycker's Bay Neighborhood Council*, 444 U.S. at 227.

[215] National Environmental Policy Act of 1969 § 102, 42 U.S.C. § 4321 (1970).

C. *A Proposed NEPA Amendment to Prevent Damage to the Environment and Promote the Health of Man*

NEPA will continue to be a purely procedural law until Congress passes a NEPA amendment. In light of the rescinded Guidance and NEPA's broader purpose to "promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man," this Note proposes amending NEPA to require consideration of greenhouse gas emissions and climate change and enforce mitigation measures.[216] Although the CEQ should continue to defer to federal agencies in making "a fully informed and well-considered decision" after satisfactorily completing an EIS, Congress should fill in this missing component of NEPA by enforcing mitigation.[217]

As previously discussed, climate change is a unique environmental dilemma for policy purposes because the lack of tangible evidence has resulted in a divide in public opinion and Congress regarding the proper course of political action. The tragedy of the commons suggests that it will be difficult to obtain public approval for regulations similar to the Clean Power Plan because there is a skepticism and lack of internal motivation surrounding climate change. Furthermore, pursuant to the loss aversion theory, without a clear and direct "loss" resulting from climate change, the general public and Congress will continue to make riskier choices instead of advocating for holistic regulation of greenhouse gas emissions.

To account for these psychological hurdles, while also incentivizing federal agencies to make environmentally-conscious decisions, this Note proposes enforcing mitigation measures rather than requiring federal agencies to select the alternative with the lowest greenhouse gas emissions. Whereas an imposition on federal agencies to select the most environmentally-conscious alternative may be internalized as a regulation or a "loss" of choice, reminiscent of the Clean Power Plan, enforcement of mitigation measures would allow federal agencies to select their preferred proposed action and then implement mitigation measures. This enforcement mechanism would apply uniformly to both federal agencies issuing a mitigated FONSI and those conducting a full EIS. The CEQ would not need to provide an enforcement unit, but alternatively could provide for citizen suits, thus allowing for private citizens to bring suits against violators to enforce the mitigation provisions of NEPA.

NEPA must be amended to consistently consider and integrate greenhouse gas emissions and climate change into the NEPA process. As mentioned in the Guidance, "[c]limate change is a fundamental

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[216] *Id.*

[217] *Strycker's Bay Neighborhood Council*, 444 U.S. at 227; *see* Flournoy, Halter & Storz, *supra* note 58, at 1585.

environmental issue, and its effects fall squarely within NEPA's purview."[218] First, the Guidance must be reinstated or ideally incorporated by Congress as an amendment to NEPA. Congress must then amend NEPA to make mitigation measures, both in mitigated FONSIs and other NEPA analyses, enforceable by citizen suit. These amendments to NEPA will finally satisfy NEPA's purpose to "promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man."[219]

V. CONCLUSION

Climate change is beginning to have tangible effects around the world, with indicators including everything from increases in atmospheric and oceanic temperatures, to decreases in snow and ice, to a rising sea level.[220] Although climate change is a natural occurrence, recent anthropogenic emissions of greenhouse gases are the highest in recorded history and clearly attribute to the increased rate of change.[221] Despite widespread concern about climate change and its effects, there is a lack of consensus on how to regulate greenhouse gas emissions.[222]

In 2016, the CEQ issued guidance clarifying the consideration of greenhouse gas emissions and climate change under NEPA.[223] The Guidance explained how federal agencies should consider greenhouse gas emissions and the effects of climate change in their environmental analyses for proposed major actions.[224] Although the Guidance was not a sweeping federal regulation, it suggested methods of analysis for greenhouse gas emissions and climate change that could have been consistently implemented by federal agencies.[225] Then, on March 28, 2017, President

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[218] Memorandum from Christina Goldfuss, *supra* note 7.

[219] National Environmental Policy Act of 1969 § 102.

[220] IPCC REPORT 2014, *supra* note 1.

[221] *Id.*

[222] Although the Environmental Protection Agency may now regulate greenhouse gas emissions under the Clean Air Act as the result of *Massachusetts v. EPA*, 549 U.S. 497 (2007), the vast majority of climate change-related legislation passed since the environmental decade of the 1970s pertains to renewable energy tax credits. *See* Emergency Economic Stabilization Act of 2008, 12 U.S.C. § 5201 (2012); Energy Policy Act of 2005, 42 U.S.C. § 15801 (2012); Consolidated Appropriations Act of 2016, Pub L. No. 114-113, 129 Stat. 2242 (Dec. 18, 2015); American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (Feb. 17, 2009).

[223] Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, 81 Fed. Reg. 51866 (Aug. 5, 2016).

[224] Memorandum from Christina Goldfuss, *supra* note 7.

[225] *Id.*

Trump issued the "Presidential Executive Order on Promoting Energy Independence and Economic Growth," rescinding the Guidance.[226] The Guidance would have compelled federal agencies to uniformly consider greenhouse gas emissions and the effects of climate change. However, NEPA in its current form can never have a meaningful impact on American greenhouse gas emissions and global climate change.[227] Ultimately, NEPA must be amended by Congress in order to reinstate the Guidance and provide for citizen suits to enforce mitigation measures before NEPA will ever satisfy its purpose of eliminating damage to the environment and promoting the health of man.

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[226] Exec. Order No. 13,783, 82 Fed. Reg. 16093 (Mar. 28, 2017).

[227] *See* Holcomb, *supra* note 11, at 6.