

**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**

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Filed with:
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INTRODUCTION

Climate change is the most important environmental challenge facing humanity. The global scientific community's findings on the anthropogenic causes of climate change and climate change's current and future impacts demand that prompt action be taken to integrate climate change analyses into governmental agency planning. The extent to which governments consider climate change impacts in planning governmental actions and take action to mitigate such impacts will strongly affect the extent to which climate change and its consequential dangers are limited or avoided in the coming century. The National Environmental Policy Act ("NEPA"), as our nation's basic environmental charter, is the mechanism incorporating environmental considerations into federal decision-making. The Council on Environmental Quality ("CEQ") is charged with overseeing NEPA and must ensure NEPA's purposes are met by issuing guidance to federal agencies on compliance with the statute. Accordingly, pursuant to the Right to Petition Government Clause contained in the First Amendment of the United States Constitution¹ and the Administrative Procedure Act,² the undersigned submit this citizen petition for rule-making respectfully requesting that CEQ amend its regulations governing compliance

¹U.S. Const., amend. I. ("Congress shall make no law ... abridging ... the right of the people ... to petition Government for a redress of grievances."). The right to petition for redress of grievances is among the most precious of the liberties safeguarded by the Bill of Rights. United Mine Workers of Am., Dist. 12 v. Illinois State Bar Ass'n, 389 U.S. 217, 222 (1967). It shares the "preferred place" accorded in our system of government to the First Amendment freedoms, and has a sanctity and a sanction not permitting dubious intrusions. Thomas v. Collins, 323 U.S. 516, 530 (1945). "Any attempt to restrict those First Amendment liberties must be justified by clear public interest, threatened not doubtful or remotely, but by clear and present danger." Id. The Supreme Court has recognized that the right to petition is logically implicit in, and fundamental to, the very idea of a republican form of government. United States v. Cruikshank, 92 U.S. 542, 552 (1875).

²5 U.S.C. § 553(e) (2005) ("Each agency shall give an interested person the right to petition for the issuance, amendment, or repeal of a rule.").

with NEPA to address the issue of climate change.

The first section of this petition summarizes the substantial scientific evidence of global climate change and its current and future adverse effects on the natural environment. The petition then explains that NEPA mandates consideration of climate change as part of each federal agency's "NEPA process"³ as a "reasonably foreseeable" effect. Finally, the petition requests that CEQ, as the statutory overseer of NEPA,⁴ clarify that an analysis of reasonably foreseeable climate change effects is necessary to comply with NEPA and CEQ's implementing regulations. Specifically, petitioners request that CEQ undertake the following actions:

- I. Amend CEQ's NEPA regulations to include language clarifying that NEPA and CEQ's implementing regulations require that climate change effects be addressed in NEPA compliance documents; and
- II. Issue a CEQ Guidance Memorandum clarifying that NEPA and CEQ regulations require that climate change effects be addressed in NEPA compliance documents. The Guidance Memorandum should include instructions to agencies on how, where, and when to best integrate climate change analyses into their respective NEPA processes.

PETITIONERS

Petitioner, **The International Center for Technology Assessment** ("CTA"), is located at 660 Pennsylvania Ave., S.E., Suite 302, Washington, DC 20003. Formed in 1994, CTA seeks to assist the public and policy makers in better understanding how technology affects society. CTA is a non-profit organization devoted to analyzing the economic, environmental, ethical, political, and social impacts that can result from the application of technology or technological

³The "NEPA process" is the term commonly used to refer to the process of agency compliance with NEPA, as informed and mandated by CEQ regulations, judicial decisions, and individual agency rules and practice. See, e.g., 51 Fed. Reg. 15618, 15620 (CEQ rule amendment).

⁴See 42 U.S.C. §§ 4321, 4344.

systems.

Petitioner, **Natural Resources Defense Council** (“NRDC”), has its headquarters at 40 West 20th Street, New York, New York 10011, with offices in Washington, D.C., Chicago, San Francisco, Los Angeles, and Beijing. Formed in 1970, it is a nonprofit organization with 1.2 million members and online activists. NRDC uses law and science to protect the planet’s wildlife and wild places and to ensure a safe and healthy environment for all living things.

Petitioner, **Sierra Club**, has its headquarters at 85 Second Street, 2nd Floor, San Francisco, CA 94105. Sierra Club is a national non-profit organization of approximately 750,000 members dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting responsible use of the earth’s ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives.

STATUTORY AND REGULATORY FRAMEWORK

I. The National Environmental Policy Act (NEPA), 42 U.S.C. §§4321 et seq.

The National Environmental Policy Act (“NEPA”) is the “basic national charter for protection of the environment.”⁵ Section 101 of NEPA contains Congress’ express recognition of “the profound impact of man’s activity on the interrelations of all components of the natural environment,” and declaration that the federal government must “use all practicable means and measures . . . to create and maintain conditions under which man and nature can exist in productive harmony”⁶ NEPA is intended to “promote efforts which will prevent or

⁵40 C.F.R. § 1500.1 (2005).

⁶The National Environmental Policy Act of 1969 § 101, 42 U.S.C. § 4331(a) (2005).

eliminate damage to the environment and biosphere and stimulate the health and welfare of man.”⁷ Moreover, NEPA “insure[s] that environmental information is available to public officials and citizens before decisions are made and before action is taken.”⁸ In order to carry out this mandate, Congress required all federal agencies to act to preserve, protect, and enhance the environment.⁹

Section 102(2)(C) of NEPA provides the basic framework by which agencies consider the environmental effects in their decision-making processes and inform the public of those effects.¹⁰ Generally, NEPA requires all federal agencies to identify and consider environmental impacts, alternatives, and mitigating measures prior to approving a project. Among other delineated duties, NEPA requires federal agencies: to “[i]nclude in every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the human environment, a detailed statement” which addresses, *inter alia*, the environmental impact of the proposed action;¹¹ to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;”¹² and to “recognize the worldwide and long-range

⁷42 U.S.C. § 4321.

⁸40 C.F.R. § 1500.1(b), (c).

⁹See 42 U.S.C. § 4331(b).

¹⁰Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989) (noting that “the sweeping policy goals announced in § 101 of NEPA are thus realized through a set of ‘action-forcing’ procedures that require that agencies take a ‘hard look’ at the environmental consequences”).

¹¹See 42 U.S.C. § 4332(C).

¹²See *id.* § 4332(E).

character of environmental problems.”¹³

II. *The Council on Environmental Quality (“CEQ”)*

NEPA also established the Council on Environmental Quality and charged CEQ with the duty of overseeing the implementation of NEPA.¹⁴ President Carter directed that CEQ promulgate regulations for the implementation of NEPA.¹⁵ The regulations subsequently promulgated by CEQ, 40 C.F.R. pts. 1500-08, implement the directives and purpose of NEPA,¹⁶ and “[t]he provisions of [NEPA] and [CEQ] regulations must be read together as a whole in order to comply with the spirit and letter of the law.”¹⁷ CEQ’s regulations are applicable to and binding on all federal agencies.¹⁸ The regulations also provide formal guidance to the courts on the requirements of NEPA and are entitled to substantial deference.¹⁹

Among other requirements, CEQ’s regulations mandate that federal agencies address all “reasonably foreseeable” environmental impacts of their proposed programs, projects, and regulations.²⁰

¹³See id. § 4332(F).

¹⁴See 42 U.S.C. §§ 4321, 4344.

¹⁵Exec. Order No. 11991, 42 Fed. Reg. 26967 (May 24, 1977), amending Exec. Order 11514, 35 Fed. Reg. 4247 (March 5, 1970), reprinted in 42 U.S.C.A. § 4321.

¹⁶40 C.F.R. § 1500.1(a).

¹⁷40 C.F.R. § 1500.3.

¹⁸40 C.F.R. §§ 1500.3, 1507.1; see, e.g., Hodges v. Abraham, 300 F.3d 432, 438 (4th Cir. 2002).

¹⁹Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 372 (1989); Robertson v. Methow Valley Council, 490 U.S. 332, 355-56 (1989); Andrus v. Sierra Club, 442 U.S. 347, 358 (1979).

²⁰See 40 C.F.R. §§ 1502.4, 1508.8, 1508.18, & 1508.25.

STATEMENT OF FACTS

I. Greenhouse Gases and Climate Change

The build-up of heat-trapping gases in the atmosphere is causing a rise in global temperatures, the phenomenon known as global warming. These gases—including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), perfluorocarbons (PFCs), chlorofluorocarbons (CFCs), and hydroflourocarbons (HFCs)—are commonly called “greenhouse gases.” The continuing increases in the concentrations of atmospheric greenhouse gases are resulting from a variety of human activities, most importantly the burning of fossil fuels. As a result, the change of our climate system due to global warming continues to increase in magnitude, and the scope and likelihood of severe impacts multiplies. Indeed, climate change brought about by global warming is already causing, and will continue to cause, a host of harmful effects.

A. The Intergovernmental Panel on Climate Change

For two decades, the science and impacts associated with global warming have been recognized on a national and international level. In 1988, the United Nations and the World Meteorological Organization appointed an international group of scientists to investigate global warming called the Intergovernmental Panel on Climate Change (“IPCC”).²¹ The U.S. government recognized the IPCC as the preeminent international body established to provide objective scientific and technical assessments on global warming.²² The White House in

²¹G.A. Res. 43/53, U.N. Doc. A/RES/43/53 (Dec. 6, 1988).

²²See S. Exec. Rep. No. 102-55, 102nd Cong., 2d Sess. at 3, 9 (Oct. 1, 1992) (explaining that IPCC’s work is “viewed throughout most of the international scientific and global diplomatic community as the *definitive statement* on the state-of-the knowledge about global climate change.”) (emphasis added).

February 2007 declared that the IPCC Fourth Assessment Report's ("IPCC FAR") work "captures and summarizes the current state of climate science research and will serve as a valuable source of information for policymakers. It reflects the sizeable and robust body of knowledge regarding the physical science of climate change, including the finding that the Earth is warming and that human activities have very likely caused most of the warming of the last 50 years."²³ In April 2007 the United States Supreme Court approvingly cited the IPCC multiple times in its decision on climate change.²⁴ In October 2007 the IPCC was awarded the Nobel Peace Prize, together with former Vice President Al Gore, for creating "an ever-broader informed consensus about the connection between human activities and global warming."²⁵

In 2007, the IPCC completed its FAR on global warming, the largest peer-reviewed scientific evaluation of climate change ever undertaken.²⁶ The IPCC FAR made the following findings with respect to observed changes in climate and their effects:²⁷

- "Eleven of the last twelve years (1995-2006) rank among the twelve warmest years in the instrumental period of global surface temperature (since 1850)...The

²³ White House press release, "Intergovernmental Panel on Climate Change Finalizes Report," Feb. 2, 2007, available at <http://www.whitehouse.gov/news/releases/2007/02/20070202.html>.

²⁴ Massachusetts v. Environmental Protection Agency, 127 S.Ct. 1438, 1447 nn.9-10, 1448 & n.12, 1449 & n.14, 1450 (2007).

²⁵ Announcement, Norwegian Nobel Committee, Norwegian Nobel Institute, The Nobel Peace Prize for 2007 (Oct. 12, 2007), available at http://nobelpeaceprize.org/eng_lau_announcement2007.html.

²⁶ See generally THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC), FOURTH ASSESSMENT REPORT (2007), available at <http://www.ipcc.ch/>.

²⁷ Intergovernmental Panel on Climate Change, "Summary for Policymakers of the Synthesis Report of the IPCC Fourth Assessment Report," at 1, Nov. 16, 2007, available at http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf.

temperature increase is widespread over the globe.”

- “Rising sea level is consistent with warming... Global average sea level has risen since 1961 at an average rate of 1.8 [1.3 to 2.3] mm/yr and since 1993 at 3.1 [2.4 to 3.8 mm/yr, with contributions from thermal expansion, melting glaciers and ice caps, and the polar ice sheets.”
- “Observed increases in snow and ice extent are also consistent with warming... Satellite data since 1978 show that annual average Arctic sea ice extent has shrunk by 2.7 [2.1 to 3.3]% per decade... Mountain glaciers and snow cover on average have declined in both hemispheres.”
- “From 1900 to 2005, precipitation increased significantly in eastern parts of North and South America, northern Europe and northern and central Asia but declined in the Sahel, the Mediterranean, southern Africa and parts of southern Asia. Globally, the area affected by drought has likely increased since the 1970s.”

Looking forward, the IPCC in November 2007 concluded that “[t]here is high agreement and much evidence that with current climate change mitigation policies and related sustainable development practices, global GHG emissions will continue to grow over the next few decades,” and that “[c]ontinued GHG emissions at or above current rates would cause further warming and induce many changes in the global climate system during the 21st century that would very likely be larger than those observed during the 20th century.”²⁸

On a regional scale, the IPCC projected:²⁹

- “[V]ery likely increase in frequency of hot extremes, heat waves, and heavy precipitation”
- “[L]ikely increase in tropic cyclone intensity”
- “[P]oleward shift of extra-tropical storm tracks with consequent changes in wind, precipitation, and temperature patterns”
- “There is high confidence that by mid-century, annual river runoff and water

²⁸ Id. at 6.

²⁹ Id. at 8.

availability are projected to increase at high latitudes (and in some tropical wet areas) and decrease in some dry regions in the mid-latitudes and tropics. There is also high confidence that many semi-arid areas (e.g. Mediterranean basin, western United States, southern Africa and northeast Brazil) will suffer a decrease in water resources due to climate change.”

The IPCC made these projections with specific reference to North America:³⁰

- “Warming in western mountains is projected to cause decreased snowpack, more winter flooding, and reduced summer flows, exacerbating competition for over-allocated water resources.”
- “In the early decades of the century, moderate climate change is projected to increase aggregate yields of rain-fed agriculture by 5-20%, but with important variability among regions. Major challenges are projected for crops that are near the warm end of their suitable range or which depend on highly utilized water resources.”
- During the course of this century, cities that currently experience heatwaves are expected to be further challenged by an increased number, intensity and duration of heatwaves during the course of the century, with potential for adverse health impacts.”
- “Coastal communities and habitats will be increasingly stressed by climate change impacts interacting with development and pollution.”

The IPCC FAR found that a number of adaptation strategies may be necessary in order to cope with these projected changes in climate.³¹ For infrastructure and settlement, especially in coastal zones, the IPCC listed these options: “relocation; seawalls and storm surge barriers; dune reinforcement; land acquisition and creation of marshlands/wetlands as buffer against sea level rise and flooding; protection of existing natural barriers.” For the transport sector, the IPCC identified “realignment/relocation; design standards and planning for roads, rail, and other infrastructure to cope with warming and draining.” For the energy sector, the IPCC enumerated “strengthening of overhead transmission and distribution infrastructure; underground cabling for

³⁰ Id. at 10.

³¹ Id. at 15.

utilities; energy efficiency; use of renewable sources; reduced dependence on single sources of energy.” For all of these measures, the IPCC called for integrating climate change considerations into planning and investment efforts.

B. The 2002 U.S. Climate Action Report

Pursuant to its obligations under the United Nations Framework Convention on Climate Change (“UNFCCC”), on May 28, 2002, the U.S. Government submitted to the U.N. the U.S. Climate Action Report 2002.³² The Climate Action Report was prepared by EPA, in coordination with a dozen other federal agencies and the Executive Office of the President.³³

The Climate Action Report addressed the impacts to human health and public welfare caused by climate change. The report found that each of the following impacts on public health or welfare, inter alia, are either likely to occur, very likely to occur, or projected to occur in the United States as a result of climate change:³⁴

- increases in temperatures in the contiguous United States of up to 5-9° F on average during the 21st century;
- rises in sea levels of up to 4-35 inches during the 21st century;
- increases in frequency of heavy precipitation events;
- increases in the severity of extreme weather, such as hurricanes;
- losses of sensitive ecosystems such as barrier islands, alpine meadows, coral reefs, and coastal wetlands;

³² U.S. DEPARTMENT OF STATE, U.S. CLIMATE ACTION REPORT 2002, THIRD NATIONAL COMMUNICATION OF THE UNITED STATES OF AMERICA UNDER THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (May 2002) (hereinafter “Climate Action Report”), available at <http://www.gcric.org/CAR2002/>.

³³ See generally 66 Fed. Reg. 15470 (March 19, 2001); 66 Fed. Reg. 57456 (Nov.15, 2001).

³⁴ The Climate Action Report developed a specific probabilistic lexicon for discussing impacts associated with climate change: “The term ‘possible’ is intended to indicate there is a finite likelihood of occurrence of a potential consequence, the term ‘likely’ is used to indicate that a suggested impact is more plausible than other outcomes, and the term ‘very likely’ is used to indicate that an outcome is much more plausible than other outcomes.” Climate Action Report, supra note 32, at 83.

- accelerated extinctions and shifts of species of plants and animals on land, shifts in distributions of species of fish and shellfish that are dependant on estuaries, and changes in the timing, locations, and perhaps viability of migration paths and nesting and feeding areas for marine mammals and other marine resources;
- increases in frequency and intensity of fires;
- increases in degradation of surface water quality;
- changes in snowpacks;
- dramatic increases in the frequency and severity of heat waves; and
- increases in threats to buildings, roads, power lines, and other infrastructure in climate sensitive areas.³⁵

More specifically, the Climate Action Report found that each of the following regional impacts on public health or welfare, *inter alia*, is very likely or likely to occur in the U.S.:

- Northeast, Southeast, and Midwest — Rising temperatures are likely to increase the heat index dramatically in summer. Warmer winters are likely to reduce cold-related stresses. Both types of changes are likely to affect health and comfort;
- Appalachians — Warmer and moister air is likely to lead to more intense rainfall events in mountainous areas, increasing the potential for flash floods;
- Great Lakes — Lake levels are likely to decline due to increased warm-season evaporation, leading to reduced water supply and degraded water quality. Lower lake levels are also likely to increase shipping costs, although a longer shipping season is likely. Shoreline damage due to high water levels is likely to decrease, but reduced wintertime ice cover is likely to lead to higher waves and greater shoreline erosion;
- Southeast — Under warmer, wetter scenarios, the range of southern tree species is likely to expand. Under hotter, drier scenarios, it is likely that grasslands and savannas will eventually displace southeastern forests in many areas, with the transformation likely accelerated by increased occurrence of large fires;
- Southeast Atlantic Coast, Puerto Rico, and the Virgin Islands — Rising sea level and higher storm surges are likely to cause loss of many coastal ecosystems that now provide an important buffer for coastal development against the impacts of storms. Currently and newly exposed communities are more likely to suffer damage from the increasing intensity of storms;
- Midwest/Great Plains — A rising CO₂ concentration is likely to offset the effects of rising temperatures on forests and agriculture for several decades, increasing productivity and thereby reducing commodity prices for the public. To the extent that overall production is not

³⁵ Climate Action Report, *supra* note 32, at 81-112.

increased, higher crop and forest productivity is likely to lead to less land being farmed and logged, which may promote recovery of some natural environments;

- Great Plains — Prairie potholes, which provide important habitat for ducks and other migratory waterfowl, are likely to become much drier in a warmer climate;
- Southwest — With an increase in precipitation, the desert ecosystems native to this region are likely to be replaced in many areas by grasslands and shrublands, increasing both fire and agricultural potential;
- Northern and Mountain Regions — It is very likely that warm weather recreational opportunities like hiking will expand, while cold-weather activities like skiing will contract;
- Mountain West — Higher winter temperatures are very likely to reduce late winter snow-pack. This is likely to cause peak runoff to be lower, which is likely to reduce the potential for spring floods associated with snowmelt. As the peak flow shifts to earlier in the spring, summer runoff is likely to be reduced, which is likely to require modifications in water management to provide for flood control, power production, fish runs, cities, and irrigation;
- Northwest — Increasing river and stream temperatures are very likely to further stress migrating fish, complicating current restoration efforts;
- Alaska — Sharp winter and springtime temperature increases are very likely to cause continued melting of sea ice and thawing of permafrost, further disrupting ecosystems, infra-structure, and communities. A longer warm season could also increase opportunities for shipping, commerce, and tourism; and
- Hawaii and Pacific Trust Territories — More intense El Niño and La Niña events are possible and would be likely to create extreme fluctuations in water resources for island citizens and the tourists who sustain local economies.³⁶

In addition, the Climate Action Report found that, because of climate change, several other widespread dangers are at risk of occurring or are matters of concern for the United States:

- increases in events of contamination of water supplies by bacteria, infectious viruses, or toxic red tides;
- increases in flooding and droughts;
- increases in a range of negative health impacts including heat-related illnesses and deaths;
- increases in infectious diseases and illness spread by insects, ticks, rodents and water-borne vectors that are sensitive to rainfall, temperature, and other weather variables; and

³⁶Id. at 110 (Key Regional Vulnerability and Consequence Issues).

increases in ozone-related respiratory illnesses due to an increase in the formation of ozone that will result from increased temperatures.³⁷

C. The 2001 National Academy of Sciences Report

In June of 2001, the White House requested that the National Academy of Sciences (“NAS”), through the National Research Council, analyze some of the key findings of the IPCC’s Third Assessment Report (“TAR”), published in 2001, and questions on climate change.³⁸

The NAS report began by flatly stating that “[g]reenhouse gases are accumulating in Earth’s atmosphere as a result of human activities, causing surface air temperatures and subsurface ocean temperatures to rise. Temperatures are, in fact, rising.”³⁹ The report agreed with the IPCC assessment of human-caused climate change presented in the IPCC TAR and endorsed the IPCC TAR as scientifically credible.⁴⁰ The NAS report stated that “[t]he IPCC’s

³⁷Id. at 106-08.

³⁸See generally NATIONAL RESEARCH COUNCIL, CLIMATE CHANGE SCIENCE: AN ANALYSIS OF SOME KEY QUESTIONS vii, 3 (2001) (hereinafter “NAS report”), available at http://www.nap.edu/catalog/10139.html?onpi_webextra6. The National Academy of Sciences is a private, non-profit, self-perpetuating society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for the general welfare. Upon authority of the charter granted to it by Congress in 1863, the Academy has a mandate that requires it to advise the federal government on scientific and technical matters. Id. at iv. The Academy’s primary means of providing such advice is through the National Research Council. Id.

³⁹Id. at 1.

⁴⁰See id. at 1 (stating that “[t]he committee generally agrees with the assessment of human-caused climate change presented in the IPCC Working Group scientific report”), 22 (stating that “[t]he body of the [IPCC Working Group I Report] is scientifically credible and not unlike what would be produced by a comparable group of only U.S. scientists working with a similar set of emission scenarios, with perhaps some normal differences in scientific tone and emphasis”). See also NATIONAL RESEARCH COUNCIL, ABRUPT CLIMATE CHANGE: INEVITABLE SURPRISES 107-08 (2003), available at http://www.nap.edu/catalog/10136.html?onpi_newsdoc121101 (subsequent NAS study concluding that greenhouse gas emissions resulting from human activities could trigger abrupt

conclusion that most of the observed warming of the last 50 years is likely to have been due to the increase in greenhouse gas concentrations accurately reflects current thinking of the scientific community on this issue.”⁴¹ The NAS report found that a “diverse array of evidence points to a warming of global surface temperatures;”⁴² moreover, “[d]espite uncertainties, there is general agreement that the observed warming is real and particularly strong within the past 20 years.”⁴³ While increases in atmospheric greenhouse gases are not the only cause of climate change, all other forces are less certain and appear less substantial than greenhouse gases.⁴⁴

The NAS report also generally agreed with the IPCC climate change modeling projections for the coming century. The NAS report found that “human-induced warming and associated sea level rises are expected to continue through the 21st century.”⁴⁵ The NAS report concluded that:

[G]lobal warming could well have serious adverse societal and ecological impacts by the end of this century Even in the more conservative scenarios, the models project temperatures and sea levels that continue to increase well beyond

changes in the Earth’s climate); NATIONAL RESEARCH COUNCIL, AIR QUALITY MANAGEMENT IN THE UNITED STATES 234 (2004) available at <http://www.nap.edu/catalog/10728.html> (another subsequent NAS study noting that the “general consensus within the scientific community is that this warming trending will continue or even accelerate in the coming decades” and that climate change interactions with air pollution will need to be considered in designing air pollution control strategies).

⁴¹NAS report, supra note 38, at 3.

⁴²Id. at 16 (also echoing the IPCC report in observing that the “warming of the Northern Hemisphere during the 20th century is likely to have been the largest of any century in the past thousand years”).

⁴³Id. at 3.

⁴⁴Id. at 12-14. However, the NAS report concluded that the causal link between greenhouse gas buildup and climate change cannot be “unequivocally established.” Id. at 17.

⁴⁵Id. at 1.

the end of this century, suggesting that assessments that examine only the next 100 years may well underestimate the magnitude of the eventual impacts.⁴⁶

Consequently, the NAS report stressed that “national policy decisions made now” will influence the extent of damage to humans and ecosystems from climate change.⁴⁷

D. Human Health Impacts of Climate Change

Scientific research has also focused specifically on the current and future impact of climate change on human health.⁴⁸ Temperature fluctuations affect human health in a surprising number of ways, from influencing the spread of infectious diseases to boosting the likelihood of illness-inducing heat waves and floods. To a large extent, public health depends on safe drinking water, sufficient food, secure shelter, and good social conditions. Anthropogenic climate change is affecting all of these conditions. In 2003, the World Health Organization (“WHO”) concluded that human-induced changes in the Earth’s climate lead to at least five million cases of illness and more than 150,000 deaths every year, a toll that could double by 2030.⁴⁹ For example, deadly heat waves in “urban island” areas, as seen in Chicago in 1995 and Paris in 2003, are intensifying in frequency, magnitude, and duration.⁵⁰ The U.S. heat wave of the summer of 2005 was unprecedented with

⁴⁶Id. at 4.

⁴⁷Id. at 1.

⁴⁸See, e.g., Paul R. Epstein, Climate Change and Human Health, 353 *New Eng. J. Med.* 1433 (2005).

⁴⁹See Juliet Eilperin, Climate Shift Tied to 150,000 Fatalities, *WASH. POST.*, November 17, 2005, at A20; A.J. McMICHAEAL *ET AL.*, *CLIMATE CHANGE AND HUMAN HEALTH - RISKS AND RESPONSES* (2003), summary available at <http://www.who.int/globalchange/climate/summary/en/index.html>.

⁵⁰G.A. Meehl & C. Tebaldi, More intense, more frequent, and longer lasting heatwaves in the 21st century, 305 *SCIENCE* 994-97 (2004). In the five-day 1995 Chicago heat wave at least

regard to intensity, duration, and geographic extent, with more than 200 cities reaching new high temperatures.⁵¹ Further, a 2005 synthesis report published in *Nature* by a team of health and climate scientists from the University of Wisconsin-Madison and WHO concluded that climate change is elevating worldwide rates of infectious vector-borne diseases like malaria, dengue fever, and encephalitis, as well as waterborne diseases such as cholera and diarrhea.⁵² Climatic influence on regional famines also exacerbates one of the largest human health problems in the world, malnutrition.⁵³ In the U.S., the weather variations of climate change contributed to the recent emergence of the hantavirus pulmonary syndrome and the West Nile virus.⁵⁴ Extremely wet weather causes its own share of public health ills, with flooding followed by disease “clusters,” as seen in the 1993 Milwaukee cryptosporidium outbreak and, more recently, in the spread of norovirus and toxins after Hurricane Katrina’s landfall.⁵⁵

In November 2005 Harvard Medical School’s Center for Health and the Global Environment published a comprehensive review of the available medical and scientific evidence. The report concluded, “Global climate change and the ripples of that change will affect every aspect of life, from municipal budgets for snowplowing to the spread of disease. Climate is

700 excess deaths (deaths in that population in excess of those expected for that period) were recorded, most of which were directly attributable to heat. Climate Action Report, supra note 32, at 106.

⁵¹Epstein, supra note 48, at 1433.

⁵²Eilperin, supra note 49; Jonathan A. Patz *et al.*, Impact of regional climate change on human health, 438 NATURE 310-17 (Nov. 17, 2005).

⁵³Patz, supra note 52.

⁵⁴Epstein, supra note 48, at 1435.

⁵⁵Id.

already changing, and quite rapidly. With rare unanimity, the scientific community warns of more abrupt and greater change in the future....[C]limate change will affect the health of humans as well as the ecosystems and species on which we depend.”⁵⁶

E. The Connection between Climate Change and “Extreme Weather” Events

Other studies have focused on the causal connection between climate change and “extreme weather” events like floods, hurricanes, and droughts. The journal of the National Academy of the Sciences, *PROCEEDINGS OF THE NATIONAL ACADEMY OF THE SCIENCES*, recently published a study on the connection between climate change and the frequency and severity of “extreme weather” completed by a team of scientists from the Purdue University Climate Change Research Center and the Abdus Salam International Centre for Theoretical Physics in Trieste, Italy.⁵⁷ The study concluded that, if human-generated greenhouse gases emissions continue to rise at their current rate, national temperatures will increase, rainfall will be heavier, winters will be shorter, and “extreme weather events”—such as floods and heat waves—are likely to become more common during the next century.⁵⁸ More specifically, the study concluded that the Southwest will experience more frequent and intense heat waves, the Gulf Coast South will get warmer and have shorter periods of heavier precipitation, the Northeast will have longer and hotter summers, and, throughout the country, mean

⁵⁶ Center for Health and the Global Environment, Harvard Medical School, Climate Change Futures: Health, Ecological and Economic Dimensions at 5 (November 2005).

⁵⁷ See Noah S. Diffenbaugh, Jeremy S. Pal, Robert J. Trapp, and Flippo Giorgi, Fine-Scale Processes Regulate the Response of Extreme Events to Global Climate Change, *THE PROC. OF THE NAT’L ACAD. OF THE SCI.*, Vol. 102, no. 44, 15774-78, October 19, 2005, available at <http://www.pnas.org/cgi/doi/10.1073/pnas.0506042102> (hereinafter “Purdue Study”).

⁵⁸ Purdue Study, supra note 57, at 15775-78; see also Juliet Eilperin, Warming to Cause Harsher Weather, Study Says, *WASH. POST.*, October 18, 2005, at A2.

temperatures will rise and reduce the length of winter.⁵⁹

The adverse effects will be “dramatic” in scope and substantially disrupt the national economy and infrastructure:

The changes in frequency and magnitude of extreme temperature and precipitation events projected here could have dramatic impacts on human and natural systems. For instance, agricultural production, water storage, seasonal energy demands, catastrophic flood loss, and human mortality could all be substantially affected. Further, natural ecosystems could be severely impacted through changes in plant community composition and biogeography and increases in risks of extinction, invasion, and exotic disease.⁶⁰

F. Other Recent Statements by Scientists

In addition to the reports described above, other major scientific bodies in the United States have issued statements similarly concluding that human-induced global warming is occurring. The American Meteorological Society,⁶¹ the American Geophysical Union,⁶² and the American Association for the Advancement of Science (AAAS)⁶³ have all published statements concluding that the evidence of human modification of the global climate is compelling.

In April 2007, the Military Advisory Board, comprised of 11 retired admirals and generals, concluded that “climate change poses a serious threat to America’s national security”

⁵⁹Purdue Study, supra note 57, at 15775-78, Table 1.

⁶⁰Purdue Study, supra note 57, at 15777 (footnotes omitted).

⁶¹ American Meteorological Society, “Climate Change: An Information Statement” (Feb. 2007), available at <http://www.ametsoc.org/POLICY/2007climatechange.html>.

⁶² American Geophysical Union Council, “Human Impacts on Climate” (Dec. 2003), available at http://www.agu.org/sci_soc/policy/climate_change_position.html.

⁶³ “AAAS Board Statement on Climate Change: Approved by the Board of Directors, American Association for the Advancement of Science” (Dec. 9, 2006), available at http://www.aaas.org/news/press_room/climate_change/mtg_200702/aaas_climate_statement.pdf.

by adding to and exacerbating threats and tensions around the world.⁶⁴ President Bush has acknowledged that human activity is a major cause of rising surface temperatures,⁶⁵ and has described climate change as one of the “great challenges of our time.”⁶⁶

In October 2007, the U.S. Secretaries of Energy and Commerce, and the Director of the Office of Science and Technology, transmitted to Congress the latest report of a Congressionally-mandated study, the U.S. Climate Change Science Program. The report concluded, “Climate change is expected to have noticeable effects in the United States: a rise in average temperatures in most regions, changes in precipitation amounts and seasonable patterns in many regions, changes in the intensity and pattern of extreme weather events, and sea level rise. Some of these effects have clear implications for energy production and use.”⁶⁷

The scientific community agrees that global climate change is occurring and human activities are contributing to climate change. Leading scientists of the world have underlined their respective conclusions about the reality of climate change and its current and future impacts

⁶⁴ MILITARY Advisory BOARD, NATIONAL SECURITY AND THE THREAT OF CLIMATE CHANGE 6-7 (2007), available at <http://securityandclimate.cna.org/report/National%20Security%20and%20the%20Threat%20of%20Climate%20Change.pdf>.

⁶⁵ White House, Fact Sheet: President Bush is Addressing Climate Change, June 30, 2005 (“We know that the surface of the Earth is warmer, and that an increase in greenhouse gases caused by humans is contributing to the problem.”), available at <http://www.whitehouse.gov/news/releases/2005/06/20050630-16.html>.

⁶⁶ Kenneth T. Walsh, Bush Moves on Climate Change, U.S. NEWS & WORLD REPORT, Oct. 11, 2007, available at <http://www.usnews.com/blogs/news-desk/2007/10/4/bush-moves-on-climate-change.html>.

⁶⁷ U.S. Climate Change Science Program, “Effects of Climate Change on Energy Production and use in the United States” at x, October 2007, available at <http://www.climatescience.gov/Library/sap/sap4-5/final-report/default.htm>.

on the planet, summarized above, with a call for governmental action: On June 7, 2005, the scientific academies from the world's leading nations issued an unprecedented joint statement urging the leaders of their countries to commit to taking prompt action to reduce emissions of greenhouse gases.⁶⁸ The statement, signed by the science academies of the United States, Great Britain, France, Russia, Germany, Japan, Italy, Canada, China, and India, stated that "there is now strong evidence that significant global warming is occurring" and reiterated the conclusions of the 2001 IPCC TAR: that it is likely that most of the warming in recent decades can be attributable to human activities and that this warming has already led to changes in the Earth's climate and associated adverse impacts.⁶⁹ The joint statement emphasized that "[t]he scientific understanding of climate change is now sufficiently clear to justify nations taking prompt action" and called on the nations meeting at the G8 Summit in July 2005 to take such action.⁷⁰

II. State-Level Environmental Impact Analysis of Climate Change Impacts

After the enactment of NEPA in 1970, numerous states followed the federal lead with the adoption of their own state-level "little NEPAs." Several of these states have adopted their own policies and protocols for considering climate impacts in their own little NEPA processes.

The state that has gone the furthest is Massachusetts, which has issued a formal policy.⁷¹

⁶⁸National Academies of Science, Joint Science Academies' Statement: Global Response to Climate Change, available at <http://nationalacademies.org/onpi/06072005.pdf>; see, e.g., Ben Hall and Fiona Harvey, Scientists Urge G8 Action on Climate Change, FINANCIAL TIMES (UK), June 8, 2005, at 1; Dan Vergano, The Debate's Over: Globe is Warming, USA TODAY, June 13, 2005, at 1A.

⁶⁹National Academics of Science, supra note 68.

⁷⁰Id.; see also infra notes 200 - 201 (subsequent statement by G8 nations on climate change).

⁷¹ Mass. Exec. Office of Energy and Env'tl. Affairs, The Environmental Monitor,

It applies to many (but not all) projects undergoing analysis under that state’s equivalent of NEPA, the Massachusetts Environmental Policy Act (MEPA).⁷² The policy requires quantification of project-related GHG emissions, and it states that “MEPA will also require that proponents consider a project alternative in the [EIS] that incorporates measures to avoid, minimize, or mitigate such emissions. For projects subject to the policy, MEPA will immediately begin incorporating into new scoping certificates the requirement that the proponent identify and describe sources of, and propose measures to avoid, minimize, or mitigate for, project-related GHG emissions.”⁷³

The state formed a technical advisory committee to formulate a protocol for quantifying GHG emissions. The resulting document includes a useful list of suggested ways to mitigate climate impacts through siting, site design, building design and operation, and transportation.⁷⁴

The Attorney General of California has filed formal comments on numerous proposed projects and plans under that state’s little NEPA law, the California Environmental Quality Act (“CEQA”). This has led to several settlements in which counties or private companies have agreed to analyze and mitigate their GHG impacts. To help local agencies cope with the uncertainty, a California-based professional society issued a white paper on how to analyze

“Greenhouse Gas Emissions Policy and Protocol” (Jan. 9, 2008) available at <http://www.mass.gov/envir/mepa/secondlevelpages/previousissue.htm>.

⁷² Mass. Gen. Laws. ch. 30, §§ 61-62H (Nov. 15, 2007).

⁷³ Mass, Exec. Office of Energy and Env’tl. Affairs, Greenhouse Gas Emissions Policy (Apr. 23, 2007) available at http://www.bdlaw.com/assets/attachments/2007-04-23_Massachusetts_Greenhouse_Gas_Emissions_Policy.pdf

⁷⁴ Mass. Exec. Office of Energy and Env’tl. Affairs , supra note 71 .

GHGs in CEQA documents.⁷⁵ The paper lays out several possible approaches, several of which involve an inventory of GHG emissions expected from a project, and an assessment of the project's compliance with emission reduction strategies contained in a report of the California Climate Action Team to the governor. Additionally, a computer model that is widely used to conduct impact analysis is California, URBEMIS, is currently being updated to report on carbon dioxide emissions.

The Executive of King County, Washington (which includes Seattle), issued an order requiring county agencies to consider climate change in their review of projects.⁷⁶ The order requires “that climate impacts, including but not limited to those pertaining to greenhouse gases, be appropriately identified and evaluated” for every public or private project where a county department is acting as lead agency under the Washington State Environmental Policy Act (“SEPA”). In this respect it goes further than the Massachusetts rule, which applies only to projects that meet certain criteria. The County is now circulating a draft worksheet that project proponents can use in estimating their GHG emissions, and has issued several executive orders with details on actions that county agencies must take.⁷⁷

Several other protocols for review of climate impacts in the EIS process have been

⁷⁵ Association of Environmental Professionals, “Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents” (June 29, 2007) available at http://216.109.139.51/Files/12403_AEP%20Global%20Climate%20Change%20June%2029%20Final.pdf.

⁷⁶ Ron Sims, King County Executive, “Executive Order on the Evaluation of Climate Change Impacts through the State Environmental Policy Act” (Sept. 7, 2007) available at <http://www.kingcounty.gov/operations/policies/executive/utilitiessaeo/put7101aao.aspx>.

⁷⁷ Ron Sims, King County Executive, Sims Global Warming Initiative, available at <http://www.kingcounty.gov/exec/globalwarming/execorders.aspx>.

circulated:

- Canadian Environmental Assessment Agency, “Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners” (November 2003).
- Levett-Therivel Sustainability Consultants, “Strategic Environmental Assessment and Climate Change: Guidance for Practitioners” (May 2004) (designed for use in England and Wales).
- The World Resources Institute and the World Business Council for Sustainable Development have developed a GHG Protocol Initiative that includes a project activity protocol that is useful in making many of the calculations described above.⁷⁸

As the above examples illustrate, ample analytical tools are available for CEQ’s use in formulating guidance that could be used by federal agencies implementing NEPA.

ARGUMENT

NEPA and CEQ’s implementing regulations establish the mechanism for incorporating environmental considerations into federal decision-making. Petitioners herein assert that this regulatory mechanism must be used to incorporate climate change considerations in the analysis stages of a proposed federal action.

I. CEQ is an “agency” subject to the provisions of the Administrative Procedure Act, 5 U.S.C. § 551 et seq.

As an initial matter, this petition requests CEQ amend its regulations partially pursuant to Section 553 of the APA, which provides that all agencies “give an interested person the right to petition for the issuance, amendment, or repeal of a rule.”⁷⁹ The APA applies to every “agency”

⁷⁸ See The Greenhouse Gas Protocol Initiative, at <http://www.ghgprotocol.org/>.

⁷⁹ 5 U.S.C. § 553(e). Petitioners also properly ground this petition in the Right to Petition Government Clause contained in the First Amendment of the United States Constitution. See U.S. Const., Amend. I.

that is a part of the federal government. The APA defines an “agency” as:

each authority of the Government of the United States, whether or not it is within or subject to review by another agency, but does not include--(A) the Congress; (B) the courts of the United States; (C) the governments of the territories or possessions of the United States; (D) the government of the District of Columbia.⁸⁰

First, none of the above express exemptions cover CEQ, nor does the APA provide any other exemptions from its coverage. Second, courts have interpreted the APA’s “agency” definition broadly, in accordance with the statute’s legislative history. In the oft-cited case of Soucie v. David, the D.C. Circuit interpreted the APA and FOIA to confer agency status on “any administrative unit with the substantial independent authority in the exercise of specific functions.”⁸¹ As that court explained in a later case, the “substantial independent authority” standard was derived from both the statutory language of the APA and the legislative history characterizing the type of authority required (“final and binding”).⁸²

⁸⁰5 U.S.C. §§ 551(1), 701(b)(1).

⁸¹448 F.2d 1067, 1073 (D.C. Cir. 1971) (holding that the Office of Science and Technology, an entity within the Executive Office of the President, was an “agency” under the APA, 5 U.S.C. § 551(1) and NEPA, 42 U.S.C. § 4332). A scholar collecting and analyzing the legislative history of the APA similarly described an “agency” for APA purposes as

a part of government which is generally independent in the exercise of [its] functions and which by law has authority to take final and binding action affecting the rights and obligations of individuals, particularly by the characteristic procedures of rule-making and adjudication.

Dong v. Smithsonian Inst., 125 F.3d 877, 881 (D.C. Cir. 1997) (quoting James O. Freedman, Administrative Procedure and the Control of Foreign Direct Investment, 119 U. Pa. L. Rev. 1, 6-9 (1970) (internal quotation marks omitted)).

⁸²125 F.3d 877, 881 (citing H.R.Rep. No.1980, 79th Cong., 2d Sess., at 19 (1946)); see also 1 KENNETH CULP DAVIS & RICHARD J. PIERCE, JR., ADMINISTRATIVE LAW TREATISE § 1.2, at 4 (3d ed. 1994) (focusing on whether “the entity has, or lacks, authority to take binding action”).

CEQ's "substantial independent authority" and actions are those of an "authority of the Government" that is subject to the APA. Pursuant to Title II of NEPA⁸³ and subsequent Executive Orders,⁸⁴ CEQ's broad independent powers include: reviewing and appraising government environmental programs and activities in light of NEPA's policy goals;⁸⁵ conducting investigations, studies, and analyses relating to ecological and environmental health;⁸⁶ reporting to and advising the President on the state of the environment;⁸⁷ and promulgating regulations, binding on all federal agencies, to implement the procedural provisions of NEPA.⁸⁸ CEQ oversees compliance with its NEPA regulations by, among other things, maintaining active monitoring of the implementation of the regulations by federal agencies, reviewing the interpretations of the regulations by the federal courts, asking for public comment on methods of improving the effectiveness of the regulations, holding public meetings on various topics, and issuing guidance documents interpreting various aspects of the regulations.⁸⁹ CEQ has also recognized itself to be an agency subject to the APA by complying with APA's public notice and

⁸³42 U.S.C. §§ 4343- 4347.

⁸⁴Exec. Order No. 11991, 42 Fed. Reg. 26967, amending Exec. Order 11514, 35 Fed Reg. 4247, (March 5, 1970), reprinted in 42 U.S.C.A. § 4321.

⁸⁵42 U.S.C. § 4344(3).

⁸⁶Id. § 4344(5).

⁸⁷Id. § 4344(1), (7).

⁸⁸40 C.F.R. § 1500.3.

⁸⁹See, e.g., CEQ, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Regulations, 46 Fed. Reg. 18026 (March 23, 1981); CEQ, Publication of Notice of Availability Memorandum for General Counsels, NEPA Liaisons and Participants in Scoping, 46 Fed. Reg. 25461, (May 7, 1981); CEQ, Guidance Regarding NEPA Regulations, 48 Fed. Reg. 34263 (July 28, 1983).

comment procedures for agency rule-making in promulgating its regulations⁹⁰ and later amending those regulations.⁹¹

Finally, the D.C. Circuit has specifically held that CEQ is an agency for purposes of the Freedom of Information Act (“FOIA”), the public information provisions of the APA.⁹² That court, and subsequent D.C. Circuit panels discussing and agreeing with the decision, concluded that CEQ was an agency the same reasons petitioners rely upon here: CEQ has the independent authority to issue binding regulations and guidelines, coordinate federal programs, and oversee certain activities of other federal agencies.⁹³

⁹⁰50 Fed. Reg. 32234, 32235 (noting that CEQ “receiv[ed] and respond[ed] to the suggestions and comments of federal, state, and local government officials, [and] private organizations” before issuing its NEPA regulations on November 29, 1978).

⁹¹See generally 5 U.S.C. § 553(b) (mandating that, with enumerated exceptions, agencies provide a Federal Register notice of proposed rulemaking); see, e.g., 50 Fed. Reg. 32234 (August 9, 1985) (publishing of the proposed amendment to 40 C.F.R. § 1502.22, the explanation for the change, and the solicitation of public comments); 51 Fed. Reg. 15618 (April 25, 1986) (publishing the final amendment to 40 C.F.R. § 1502.22 and responding to public comments received).

⁹²Pacific Legal Foundation v. Council on Environmental Quality, 636 F.2d 1259, 1262-63 (D.C. Cir. 1980) (holding that CEQ was an “agency” for the purposes of the Government in the Sunshine Act and FOIA, 5 U.S.C. § 552, the public information provision of the APA). CEQ recognized itself as an agency generally in that litigation, arguing only that it was not functioning as one when specifically advising the President. Id. at 1263-64. The court rejected that argument. Id.

⁹³Id.; see also Meyer v. Bush, 981 F.2d 1288, 1292 (D.C. Cir. 1993) (discussing and agreeing with Pacific Legal Foundation); Energy Research Foundation v. Defense Nuclear Facilities Safety, 917 F.2d 581, 584 (D.C. Cir. 1990) (same); Rushforth v. Council of Economic Advisors, 762 F.2d 1038, 1041-1042 (D.C. Cir. 1985) (same). The court in Pacific Legal Foundation relied upon the earlier D.C. Circuit decision, Soucie v. David, in which the circuit held that the Office of Science and Technology (OSTP) was an “agency” for purposes of FOIA and the APA because it had substantial independent authority, such as evaluating federal programs, initiating and supporting research, and awarding scholarships. 448 F.2d 1067, 1073-75 (D.C. Cir. 1971) (“By virtue of its independent function of evaluating federal programs, the OST must be regarded as an agency subject to the APA and the Freedom of Information Act.”).

Accordingly, this petition is properly grounded in the APA. As such, CEQ is subject to the judicial review provisions of the APA and must respond to this petition in a timely manner.⁹⁴

II. The effects of climate change are “reasonably foreseeable” effects that must be addressed in NEPA compliance documents.

CEQ regulations require the analysis of both direct and indirect, as well as cumulative, effects in NEPA documents.⁹⁵ While some uncertainties about climate change may remain,⁹⁶ agencies cannot, by law, wait until after climate change effects are certain to occur in order to address them. Rather, CEQ’s regulations mandate that federal agencies address all “*reasonably foreseeable*” environmental impacts of their proposed programs, projects, and regulations.⁹⁷ An environmental effect is “reasonably foreseeable” if it is “sufficiently likely to occur that a person

Congress later codified Soucie’s reasoning, amending the FOIA definition of “agency” to specifically include any “establishment of the executive branch of Government (including the Executive Office of the President).” 5 U.S.C. § 552(f)(1) (Dec. 31, 2007); see Armstrong v. Executive Office of the President, 90 F.3d 553, 557-58 (D.C. Cir. 1996).

⁹⁴See 5 U.S.C. § 555(b) (requiring that an agency “within a reasonable time . . . proceed to conclude a matter presented to it”); id. § 553(e) (requiring that “[p]rompt notice shall be given of the denial in whole or in part of a written application, petition, or other request of an interested person made in connection with any agency proceeding. Except in affirming a prior denial or when the denial is self-explanatory, the notice shall be accompanied by a brief statement of the grounds for denial.”); id. § 706(1) (requiring that a reviewing court shall “compel agency action unlawfully withheld or unreasonably delayed”).

⁹⁵See 40 C.F.R. §§ 1508.8 & 1508.25(c).

⁹⁶See NAS report, supra note 38, at foreword viii (“[P]olicy makers . . . frequently have to weigh tradeoffs and make decisions on important issues, despite the inevitable uncertainties of our scientific understanding concerning particular aspects. Science never has all the answers.”); see also THE GLENEAGLES COMMUNIQUÉ ON AFRICA, CLIMATE CHANGE, ENERGY AND SUSTAINABLE DEVELOPMENT, G8 Summit, at 1, July 8, 2005, available at http://www.fco.gov.uk/Files/kfile/PostG8_Gleneagles_Communique,0.pdf (“While uncertainties remain in our understanding of climate science, *we know enough to act now . . .*”) (emphasis added).

⁹⁷See 40 C.F.R. §§ 1502.4, 1508.7, 1508.8, 1508.18, & 1508.25.

of ordinary prudence would take it into account in reaching a decision.”⁹⁸ It is well-established that some “reasonable forecasting” by the agency is implicit in the NEPA process, and that it is the responsibility of federal agencies to predict the environmental effects of proposed actions before they are fully known.⁹⁹

The overwhelming consensus of national and international scientific evidence supports the conclusion that climate change is resulting from global warming, i.e., the build-up of greenhouse gases in the atmosphere, and that the subsequent changes are adversely affect our global environment.¹⁰⁰ Stated differently, climate change is “reasonably foreseeable,” as that phrase is understood in the context of NEPA and the CEQ regulations.¹⁰¹ The IPCC FAR and the NAS report both concluded that climate change is being caused by the build-up of

⁹⁸See, e.g., City of Shoreacres v. Waterworth, 420 F.3d 440, 453 (5th Cir. 2005); Dubois v. U.S. Dept. of Agriculture, 102 F.3d 1273, 1286 (1st Cir. 1996) Mid States Coalition for Progress v. Surface Transp. Bd., 345 F.3d 520, 549 (8th Cir. 2003) (all quoting Sierra Club v. Marsh, 976 F.2d 763, 767 (1st Cir. 1992)) (internal quotation marks omitted).

⁹⁹Scientists’ Inst. for Pub. Info. v. Atomic Energy Comm’n, 481 F.2d 1079, 1092 (D.C. Cir. 1973) (“It must be remembered that the basic thrust of an agency’s responsibilities under NEPA is to predict the environmental effects of proposed action *before the action is taken and those effects fully known. Reasonable forecasting and speculation is thus implicit in NEPA . . .*”) (emphasis added).

¹⁰⁰See supra pp. 7 - 21 and accompanying footnotes.

¹⁰¹CEQ expounded on what is a “reasonably foreseeable” effect in its “Forty Most Asked Questions Concerning CEQ’s NEPA Regulations:”

[I]n the ordinary course of business, people do make judgments based upon reasonably foreseeable occurrences. . . . The agency has the responsibility to make an informed judgment, and to estimate future impacts on that basis, especially if trends are ascertainable The agency cannot ignore these uncertain but probable, effects of its decisions.

greenhouse gases in the atmosphere, a result of human activities. Both studies also agreed that climate change is currently causing, and will continue to cause, a wide range of adverse impacts on the planet.¹⁰² The 2002 Climate Action Report provided a long list of widespread and regional impacts on the United States that were likely or very likely to occur as a result of climate change.¹⁰³ Further, more specific and recent studies highlight the direct health effects of climate change, as well as support the causal link between climate change and the increased frequency and severity of extreme weather events and their consequential damages.¹⁰⁴ Finally, the National Academies of Science of eleven major nations—including the U.S.—recently issued a joint statement unequivocally declaring that the scientific understanding of climate change is sufficiently certain to justify prompt governmental action.¹⁰⁵ Accordingly, climate change impacts clearly qualify as reasonably foreseeable effects that must be addressed in environmental compliance documents to properly comply with NEPA and CEQ regulations.¹⁰⁶

¹⁰²See supra pp. 7- 11 & 14- 16 and accompanying footnotes.

¹⁰³See supra pp. 11 - 14 and accompanying footnotes.

¹⁰⁴See supra pp. 16 - 19 and accompanying footnotes.

¹⁰⁵See supra p. 21 and accompanying footnotes.

¹⁰⁶As early as 1993, CEQ itself recognized the dangers of climate change, discussing them in a CEQ Report on incorporating biodiversity into agency NEPA analyses:

Global climate change

Over the long run, global climate change present a potentially major- some would say *the* major - threat to biodiversity. Should current global climate change projections (such as those discussed by the United Nations Intergovernmental Panel on Climate Change) be realized, many organisms and natural systems would not be able to function in their current ranges. Sea level rise and increased temperatures would force the present pattern of biodiversity to adapt to new conditions or to disperse to colonize new areas. Plants and animals attempting to adapt would face rates of change many times that needed to evolve or even to

That said, uncertainty may exist regarding the extent of a proposed project’s effect on climate change, or conversely, the extent of the climate change’s effect on a proposed project. Nonetheless, when the *nature* of an effect is reasonably foreseeable but its *extent* is not, the agency cannot simply ignore the effect. CEQ regulations account for this very type of uncertainty—the evaluation of “reasonably foreseeable significant adverse effects” when “there is incomplete or unavailable information”—and require that agency NEPA evaluations still attempt to address the effects.¹⁰⁷ In such cases, agencies must first make clear that necessary information is lacking.¹⁰⁸ Then, if the situation is such that the cost of obtaining the information is exorbitant or the means to obtain it are unknown, the agency must: 1) state that the information is unavailable; 2) state the information’s relevance; 3) give a summary of the existing “scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts;” and 4) evaluate such impacts based on “theoretical approaches or research methods generally accepted in the scientific community.”¹⁰⁹

The same CEQ regulation also states that “reasonably foreseeable” impacts would include “impacts which have catastrophic consequences, even if their probability of occurrence is low,

migrate for many species (e.g. trees). The ability of ecosystems to shift their locations would be further hindered by fragmentation of the natural landscape that places inhospitable environments between current and future ranges.

Council on Environmental Quality, [Incorporating Biodiversity Considerations Into Environmental Impact Analysis Under the National Environmental Policy Act](http://www.eh.doe.gov/nepa/tools/guidance/Guidance-PDFs/iii-9.pdf), at 3, January 1993, available at <http://www.eh.doe.gov/nepa/tools/guidance/Guidance-PDFs/iii-9.pdf>.

¹⁰⁷See 40 C.F.R. § 1502.22.

¹⁰⁸Id.

¹⁰⁹Id. § 1502.22(b).

provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.”¹¹⁰ Once again, the effects from climate change easily fit into what NEPA and CEQ contemplate should be addressed in agency NEPA processes as “reasonably foreseeable.” First, the evidence of the impacts associated with climate change has been thoroughly peer reviewed and is supported by eminently credible scientific bodies, including a worldwide consensus of the National Science Academies.¹¹¹ And second, as the recent Purdue study and others have concluded, the impacts of climate change in some cases are “catastrophic” in nature, leading to an increase in the frequency and severity of extreme weather events like floods and droughts.¹¹²

Indeed, the United States Supreme Court has found the evidence to be compelling. In its decision of April 2, 2007 in *Massachusetts v. Environmental Protection Agency*, 127 S.Ct. 1438 (2007) (a decision that resulted from a petition filed by the International Center for Technology Assessment, and litigated together with the other petitioner here, the Natural Resources Defense Council, and many others), the Court declared:

The harms associated with climate change are serious and well recognized. Indeed the [NAS Report] itself -- which EPA regards as an “objective and independent assessment of the relevant science,” 68 Fed.Reg. 52930—identifies a number of environmental changes that have already inflicted significant harms, including “the global retreat of mountain glaciers, reduction in snow-cover extent, the earlier spring melting of rivers and lakes, [and] the accelerated rate of rise of sea levels during the 20th century relative to the past few thousand years...” [NAS Report] 16.¹¹³

¹¹⁰ Id.; 51 Fed. Reg. 15618, 15621 (April 25, 1986).

¹¹¹ See supra pp. 21 - 22 and accompanying footnotes; supra note 68 (joint NAS statement).

¹¹² See Purdue Study, supra pp. 18 - 19 and accompanying footnotes.

¹¹³ 127 S.Ct. at 1455.

In finding that EPA has an obligation to make a formal finding about whether greenhouse gases endanger public health or welfare, the Supreme Court noted that “EPA does not dispute the existence of a causal connection between man-made greenhouse gas emissions and global warming,”¹¹⁴ and the Court remarked:

We moreover attach considerable significance to EPA’s “agree[ment] with the President that “we must address the issue of global climate change,”” 68 Fed.Reg. 52929 (quoting remarks announcing Clear Skies and Global Climate Incentives, 2002 Public Papers of George W. Bush, Vol. 1, Feb. 14, p. 227 (2004), and to EPA’s ardent support for various voluntary emission-reduction programs, 68 Fed.Reg. 52932.¹¹⁵

It should also be noted that CEQ’s regulations provide that environmental documents under NEPA should address “[e]nergy requirements and conservation potential of various alternatives and mitigation measures.”¹¹⁶ According to the U.S. Energy Information Administration, energy-related carbon dioxide emissions amounted to 82.3% of all U.S. greenhouse gas emissions in 2006.¹¹⁷ Thus, the CEQ regulations already require discussion of, by far, the most important source of greenhouse gas emissions.

III. Numerous courts have held that NEPA requires consideration of climate impacts

Several federal courts have addressed the question of whether a particular action required an EIS-level discussion of climate impacts. The first such decision was *City of Los Angeles v.*

¹¹⁴ Id. at 1457.

¹¹⁵ Id. at 1458.

¹¹⁶ 40 C.F.R. § 1502.16(e).

¹¹⁷ U.S. Energy Information Administration, “Emissions of Greenhouse Gases in the United States 2006” at 1 (November 2007) available at <ftp://ftp.eia.doe.gov/pub/oiaf/1605/cdrom/pdf/ggrpt/057306.pdf>.

National Highway Traffic Safety Administration.¹¹⁸ It concerned the setting of the Corporate Average Fuel Economy (CAFE) standard. The complaint alleged that a lower standard would worsen global warming. The court found that plaintiffs had standing to bring the lawsuit (itself a significant holding), but that the one-mile per gallon change in the CAFE standard at issue was not so significant as to require an EIS. This court -- like all subsequent federal courts to address the question -- did not doubt that global warming was a proper subject for analysis under NEPA; it merely found a particular action's impacts to fall below the threshold of significance.

The next decision, *Border Power Plant Working Group v. Department of Energy*,¹¹⁹ concerned the construction of transmission lines to carry electricity from new power plants in Mexico to users in southern California. The court found that carbon dioxide emissions should have been analyzed under NEPA. The same year, the Eighth Circuit in *Mid States Coalition for Progress v. Surface Transportation Board*¹²⁰ considered the construction of a rail line to bring coal from mines in Wyoming to power plants in Minnesota and South Dakota. The court found that the EIS should have considered the air emissions (including carbon dioxide) from the power plants.

¹¹⁸ 912 F.2d 478 (D.C. Cir. 1990).

¹¹⁹ 260 F.Supp.2d 997 (S.D. Cal. 2003).

¹²⁰ 345 F.3d 520 (8th Cir. 2003). Cf. Mayo Found. v. Surface Transp. Bd, 472 F.3d 545 (8th Cir. 2006). The supplemental EIS resulting from the 2003 decision concluded that the railroad expansion would lead to a minor increase in air emissions of carbon dioxide (less than 1%) associated with increased coal consumption and the agency determined it was unnecessary to impose additional mitigating conditions on the project. In the supplemental documents, the agency noted that its modeling and data limitations meant that it could not obtain the reasonably foreseeable adverse local impacts associated with such small emissions increases. The court determined that the Board adequately analyzed the issue and properly followed the Council on Environmental Quality (CEQ) guidelines (40 C.F.R. §1502.22(b)) by noting the incomplete and unavailable information. 472 F.3d at 555-56.

In another case, plaintiffs won several procedural motions. *Friends of the Earth, Inc. v. Mosbacher* concerns the actions of the Overseas Private Investment Corporation (OPIC) and the Export-Import Bank (Ex-Im Bank) in financing several energy projects abroad. Plaintiffs said these projects would generate GHGs that would affect the climate in the United States, and OPIC and Ex-Im Bank should have analyzed the projects under NEPA. The U.S. District Court for the Northern District of California ruled that the case should go forward. It found that, because domestic effects were alleged and the relevant decisions were made in the U.S., the case did not fail for alleging only extraterritorial impacts. It found disputed issues of fact as to whether the federal actions in financing the projects were so significant that EISs should have been prepared.¹²¹ The district court subsequently certified several key issues in the case for interlocutory appeal to the Ninth Circuit.

Most recently, the Ninth Circuit annulled the average fuel economy standards for light trucks, in part because no EIS had been prepared. The court declared, “The impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct.”¹²²

IV. CEQ should amend its NEPA regulations to clarify that climate change analysis is required by NEPA and CEQ regulations. CEQ should also issue a guidance memorandum on addressing climate change impacts in NEPA documents.

Climate change is an issue of paramount import, on which the global scientific consensus has concluded that prompt governmental action should be taken to reduce human-created

¹²¹ 488 F.Supp.2d 889 (N.D. Cal., March 20, 2007).

¹²² Center for Biological Diversity v. National Highway Traffic Safety Administration, 508 F.3d 508 (9th Cir. 2007).

emissions.¹²³ CEQ’s statutorily-enumerated duties include the responsibilities of “document[ing] and defin[ing] changes in the natural environment, including plant and animal systems,” and “accumulat[ing] necessary data and other information for a continuing analysis of these changes or trends and interpretation of their underlying causes.”¹²⁴ CEQ is also statutorily charged to “formulate and recommend national policies to promote the improvement of the quality of the environment.”¹²⁵ The President further instilled in CEQ the duty of issuing regulations for the implementation of NEPA and issuing other instructions to agencies as CEQ’s responsibilities under NEPA require.¹²⁶ CEQ’s regulations are also guidance to the courts and given substantial judicial deference.¹²⁷

Mindful of its duties and the crucial role of its regulations, CEQ has said that “continual attention is required to ensure that the mandate of the regulations is being fulfilled.”¹²⁸

Accordingly, petitioners respectfully request that CEQ fulfill its statutory responsibilities and instruct federal agencies to address climate change in their NEPA processes. CEQ, as the overseer of NEPA and the promulgator of NEPA’s implementing regulations, must advise and instruct federal agencies that the inclusion of climate change analyses in environmental

¹²³See supra note 68 (joint NAS statement).

¹²⁴42 U.S.C. § 4344(6).

¹²⁵42 U.S.C. § 4342.

¹²⁶Exec. Order No. 11991, sec. 3(h) (May 24, 1977), 42 Fed. Reg. 26967, amending Exec. Order 11514, 35 Fed. Reg. 4247, (March 5, 1970), reprinted in 42 U.S.C. § 4321.

¹²⁷Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 372 (1989); Robertson v. Methow Valley Council, 490 U.S. 332, 355-56 (1989); Andrus v. Sierra Club, 442 U.S. 347, 358 (1979).

¹²⁸51 Fed. Reg. 15619, 15619 (April 25, 1986).

compliance documents is mandated by the statute and its implementing regulations. Each agency could then properly determine the extent to which such climate change analysis was necessary to each of its proposed federal actions in order to properly comply with NEPA and CEQ regulations. Similarly, courts could then better review agency actions for compliance with NEPA.

CEQ should fulfill its statutory mandate by several means. First, CEQ should amend its regulations to clarify that NEPA requires that agencies address climate change. In addition, CEQ should issue a guidance memorandum explaining that NEPA and existing CEQ regulations require that agencies address climate change. Finally, CEQ should also address the issue of climate change by some other means, such as preparing a comprehensive handbook.

A. *Amending CEQ's Regulations*

CEQ has previously reviewed its regulations to identify areas where further interpretation or guidance is required.¹²⁹ The CEQ regulations have also been amended previously: In response to requests received from both government agencies and private parties, CEQ amended its regulation addressing incomplete or unavailable information in an environmental impact statement.¹³⁰ CEQ amended that rule in order to, *inter alia*, “better inform the decisionmaker and the public.”¹³¹ The same rationale applies in this case. The rule amendments should clarify that

¹²⁹See, e.g., Forty Most Asked Questions Concerning CEQ's National Environmental Policy Regulations, 46 Fed. Reg. 18026 (March 23, 1981); Memorandum for General Counsels, NEPA Liaisons and Participants in Scoping, 46 Fed. Reg. 25461, April 30, 1981; Guidance Regarding NEPA Regulations, 48 Fed. Reg. 34263 (July 28, 1983).

¹³⁰51 Fed. Reg. 15618 (April 25, 1986). See Preamble to Amendment of 40 C.F.R. 1502.22 (deleting the prior requirement for a “worst case analysis”) at 51 Fed. Reg. 15618, 15624 (April 25, 1986); see also Robertson v. Methow Valley Council, 490 U.S. 332, 354-56 (1989) (discussing the CEQ rule amendment in the context of judicial deference to CEQ).

agencies are to address climate change in the planning of major federal actions, discussing both the potential impact on emissions of greenhouse gases and how climate change might itself affect major federal projects.

1. 40 C.F.R. § 1508.8 (Effects)

The determination of what is an “effect” plays a crucial role in the NEPA process. As an initial matter, the threshold for when an agency must prepare an Environmental Impact Statement (EIS) is if the action “significantly affect[s] the quality of the human environment.”¹³²

“Affecting” is defined to mean “will or may have an effect on.”¹³³ Thus the scope of what is an “effect” for agency consideration substantially informs the agency’s decision of whether or not to complete an EIS. Moreover, throughout the NEPA process, the statute and CEQ regulations require that agencies discuss and analyze the effects of the proposed action and its alternatives.¹³⁴

As explained above, climate change effects are “reasonably foreseeable” and accordingly should be included in agency effects analyses.¹³⁵ This conclusion is further buttressed by the proactive, anticipatory definition of “affecting,” as including those things that “*may* have an

¹³¹51 Fed. Reg. 15618, 15620.

¹³²42 U.S.C. § 4332(2)(C); see 40 C.F.R. § 1502.3.

¹³³40 C.F.R. § 1508.3.

¹³⁴See, e.g., 40 C.F.R. §§ 1508.9 (requiring that EA’s include a discussion of environmental impacts of the action and its alternatives), 1502.16 (the environmental consequences section of an EIS shall include discussion of environmental impacts of the action and its alternatives), 1502.2 (the EIS shall include discussion of the impacts of the proposed action and its alternatives.), 1502.14 (the alternatives section of the EIS shall include discussion of alternatives and their impacts, including mitigation and identifying the environmentally preferable alternative

¹³⁵See Argument Section II, supra pp. 29 - 34.

effect on” the environment.¹³⁶

The CEQ regulation defining “effects” provides:

“Effects” include:

- (a) Direct effects, which are caused by the action and occur at the same time and place.
- (b) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Effects and impacts as used in these regulations are synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.¹³⁷

To better inform the public, the agencies, and the courts in their decisionmaking, CEQ should amend this regulation to include reference to climate change. First, section (b) should be amended to read in relevant part:

- (b) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. *Such effects include the contribution of the action to climate change through, for example, the release of greenhouse gas emissions.*

Second, CEQ should amend the final paragraph of the regulation to read in relevant part:

Effects and impacts as used in these regulations are synonymous. Effects includes

¹³⁶40 C.F.R. § 1508.3. (emphasis added).

¹³⁷40 C.F.R. § 1508.8 (2005).

ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems, *including those related to and contributing to climate change*), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative.

2. 40 C.F.R. § 1508.27 (Significantly)

The definition of “significantly” in the phrase “significantly affect[s] the quality of the human environment” is also crucial to an agency’s threshold determination of whether or not a proposed action requires an EIS.”¹³⁸ CEQ regulations define “significantly” in terms of both “context” and “intensity,” providing:

§ 1508.27 Significantly.

“Significantly” as used in NEPA requires considerations of both context and intensity:

(a) Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

(b) Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:

- (1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.
- (2) The degree to which the proposed action affects public health or safety.
- (3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
- (4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.
- (5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.
- (6) The degree to which the action may establish a precedent for future actions with

¹³⁸42 U.S.C. § 4332(2)(C); see 40 C.F.R. § 1502.3.

significant effects or represents a decision in principle about a future consideration.

(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

(8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

(10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.¹³⁹

As denoted above, the CEQ regulation lists various factors to be considered in the determination of a project's impact's severity—for example, the effects on public health and safety, whether effects are highly controversial, whether historic, cultural, or scientific resources are affected, and whether endangered or threatened species are involved.¹⁴⁰ To better inform the public, the agencies, and the courts in their decisionmaking, CEQ should amend this regulation to include climate change impacts as a similarly listed factor. The list of factors agencies should consider when evaluating “intensity” of “significant” impacts should be amended to read in relevant part:

The following should be considered in evaluating intensity:

(1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

(2) The degree to which the proposed action affects public health or safety.

(3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

(4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.

(5) The degree to which the possible effects on the human environment are highly uncertain or

¹³⁹40 C.F.R. § 1508.27

¹⁴⁰Id.

involve unique or unknown risks.

(6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

(8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

(10) The degree to which the action directly or indirectly affects greenhouse gas emissions, climate change, or atmospheric resources.

(11) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

3. 40 C.F.R. § 1502.16 (Environmental Consequences)

An EIS must include a discussion of environmental consequences, which forms the “scientific and analytic basis for the comparisons” of the proposed action and its alternatives.¹⁴¹ CEQ regulations require that agencies discuss various types of effects in addressing the environmental consequences of a proposed action, including: direct and indirect effects of the proposed action and its alternatives; possible land use conflicts; energy effects and conservation potential; natural and depletable resource requirements; urban quality, historic, and cultural resources requirements; and possible alternatives to and mitigation measures of all the environmental consequences.¹⁴² Petitioners request that CEQ amend this regulation to expressly include climate change impacts and mitigation measures in an EIS’s environmental consequences discussion section.

The CEQ regulation regarding an agency’s discussion of environmental impacts of the

¹⁴¹40 C.F.R. § 1502.16.

¹⁴²40 C.F.R. § 1502.16.

proposed action and its alternatives provides:

§ 1502.16 Environmental consequences.

This section forms the scientific and analytic basis for the comparisons under § 1502.14. It shall consolidate the discussions of those elements required by secs. 102(2)(C)(i), (ii), (iv), and (v) of NEPA which are within the scope of the statement and as much of sec. 102(2)(C)(iii) as is necessary to support the comparisons. The discussion will include the environmental impacts of the alternatives including the proposed action, any adverse environmental effects which cannot be avoided should the proposal be implemented, the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented. This section should not duplicate discussions in § 1502.14. It shall include discussions of:

- (a) Direct effects and their significance (§ 1508.8).
- (b) Indirect effects and their significance (§ 1508.8).
- (c) Possible conflicts between the proposed action and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned. (See § 1506.2(d).)
- (d) The environmental effects of alternatives including the proposed action. The comparisons under § 1502.14 will be based on this discussion.
- (e) Energy requirements and conservation potential of various alternatives and mitigation measures.
- (f) Natural or depletable resource requirements and conservation potential of various alternatives and mitigation measures.
- (g) Urban quality, historic and cultural resources, and the design of the built environment, including the reuse and conservation potential of various alternatives and mitigation measures.
- (h) Means to mitigate adverse environmental impacts (if not fully covered under § 1502.14(f)).¹⁴³

To better inform the public, the agencies, and the courts in their decisionmaking, CEQ should amend this regulation to read in relevant part:

The discussion will include the environmental impacts of the alternatives including the proposed action, any adverse environmental effects which cannot be avoided should the proposal be implemented, the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity, including within this discussion the

¹⁴³40 C.F.R. § 1502.16 (2005).

issue of climate change, and any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented.

CEQ should also amend the latter half of the regulation, which enumerates the topics that shall be included in the agencies' discussion of environmental impacts, to read in relevant part:

It shall include discussions of:

- (a) Direct effects and their significance (§ 1508.8).
- (b) Indirect effects and their significance (§ 1508.8).
- (c) Possible conflicts between the proposed action and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned. (See § 1506.2(d).)
- (d) The environmental effects of alternatives including the proposed action. The comparisons under § 1502.14 will be based on this discussion.
- (e) Energy requirements and conservation potential of various alternatives and mitigation measures.
- (f) Natural or depletable resource requirements and conservation potential of various alternatives and mitigation measures.
- (g) *The contribution of the proposed action and alternatives to greenhouse gas emissions and other factors that influence the climate, and measures to mitigate those contributions*
- (h) *The effects of reasonably foreseeable changes in the climate on the proposed action and alternatives, and measures to mitigate those effects.*
- (i) Urban quality, historic and cultural resources, and the design of the built environment, including the reuse and conservation potential of various alternatives and mitigation measures.
- (j) Means to mitigate adverse environmental impacts (if not fully covered under § 1502.14(f)).

The amendment recommendations above are merely a starting point for CEQ's inclusion of climate change analysis in its regulations. Pursuant to APA rulemaking procedures and CEQ's mandate under NEPA, it should hold public hearings and solicit public comments on this topic to create a dialog between the agency and the public and best determine precisely where and how to amend the regulations to include guidance on climate change. Any amendments should include a preamble and background discussion explaining the rationale for the amendments and their meaning.¹⁴⁴ Further explanation and

¹⁴⁴See, e.g., Preamble to Amendment of 40 C.F.R. 1502.22 (explaining the rationale for amending the previous "worst case analysis" language) at 51 Fed. Reg. 15618, 15625 (April 25, 1986); see generally WILLIAM F. FUNK, SIDNEY A. SHAPIRO, AND RUSSELL L. WEAVER, ADMINISTRATIVE

clarification of CEQ's regulations on the inclusion of climate change in NEPA analyses should be concurrently outlined in the form of a guidance document, discussed below.

B. Issuance of a Guidance Document on the Incorporation of Climate Change into agency NEPA Analyses

CEQ also has the power—and the responsibility—to give guidance concerning NEPA by means other than rule amendments.¹⁴⁵ CEQ has fulfilled this responsibility in the past by issuing self-contained guidance memoranda and handbooks on various aspects of NEPA compliance.¹⁴⁶

PRACTICE AND PROCEDURE 97-98 (2nd ed. 2001).

¹⁴⁵See 40 C.F.R. § 1506.7 (noting that other means of CEQ guidance include a guidance handbook and the publication of stand-alone CEQ memoranda to federal agency heads); Exec. Order No. 11991, 42 Fed. Reg. 26967 (May 24, 1977), amending Exec. Order 11514, 35 Fed. Reg. 4247, (March 5, 1970), reprinted in 42 U.S.C.A. § 4321 (delineating that the responsibilities of the CEQ shall include: issuing instructions to agencies as may be required to carry out its duties under the Act; recommending to the agencies priorities among the programs for the enhancement of the environment; and conducting public hearings and conferences on issues of environmental significance).

¹⁴⁶See, e.g., Council on Environmental Quality, Collaboration in NEPA: A Handbook for NEPA Practitioners, October 2007; Joshua Bolten, Director, Office of Management and Budget, and James L. Connaughton, Chairman, Council on Environmental Quality, Memorandum on Environmental Conflict Resolution, November 28, 2005; Horst G. Greczmiel, Associate Director for NEPA Oversight, CEQ, Emergency Actions and NEPA, September 8, 2005; James L. Connaughton, Chairman, Council on Environmental Quality, Guidance on the Consideration of Past Actions in Cumulative Effects Analysis, June 24, 2005; James L. Connaughton, Chairman, Council on Environmental Quality, Report on Cooperating Agencies in Implementing the Procedural Requirements of the National Environmental Policy Act (NEPA), May 26, 2005; James L. Connaughton, Chairman, Council on Environmental Quality, CEQ Memorandum to Heads of Federal Agencies: Reporting Cooperating Agencies in Implementing the Procedural Requirements of the National Environmental Policy Act, December 23, 2004; James L. Connaughton, Chairman, Council on Environmental Quality, CEQ Memorandum to the Secretary of Agriculture and the Secretary of the Interior: Guidance for Environmental Assessments of Forest Health Projects, December 9, 2002; James L. Connaughton, Chairman, Council on Environmental Quality, Memorandum for the Heads of Federal Agencies: Cooperating Agencies in Implementing the Procedural Requirements of the National Environmental Policy Act, January 30, 2002; Katherine A. McGinty, Council on Environmental Quality, Memorandum to Heads of Agencies on the Application of the National Environmental Policy Act to Proposed Federal Actions in the United States with Transboundary Effects, July 1,

In fact, in 1997 CEQ circulated to all federal agency NEPA liaisons a draft guidance regarding consideration of global climate change under NEPA. This document was never finalized.

However, it has many statements that are directly germane to this Petition. The draft CEQ guidance document stated:

A growing body of scientific evidence supports the concern that global climate change will result from the continued build-up of greenhouse gases in the atmosphere...

Because of the potentially substantial health and environmental impacts associated with climate change, the Council on Environmental Quality is issuing this guidance today calling on federal agencies to consider, in the context of the NEPA process, both how major federal actions could influence the emissions and sinks of greenhouse gases and how climate change could potentially influence such actions.

The NEPA process provides an excellent mechanism for consideration of ideas related to global climate change. The federal government is a major energy consumer and therefore a major source of greenhouse gas emissions... In addition, many major federal actions are large-scale, often involving planning and operations over many decades. Consideration of the potential impact of climate change on these projects may be critical to avoiding costly operation and maintenance problems in future decades.

.... The available scientific evidence ... indicates that climate change is “reasonably foreseeable” impacts of emissions of greenhouse gases, as that phrase is understood in the context of NEPA and the CEQ regulations.

...Global climate change is a serious environmental concern which, given the current state of scientific knowledge, must be viewed under NEPA as a reasonably foreseeable impact of continued emissions and changes in sinks of greenhouse gases. Thus, federal agencies must analyze the extent to which both their proposed and ongoing programs or other activities might influence such emissions and sinks, thereby contributing to, or reducing, the problems of global warming. Such analyses can best be done in the context of NEPA and should look at how federal actions may affect global climate change and, to the extent possible given the current state of scientific knowledge, how federal actions may be affected by global climate change.¹⁴⁷

1997; Michael R. Deland, Council on Environmental Quality, Memorandum to Heads of Federal Departments and Agencies Regarding Pollution Prevention and the National Environmental Policy Act, January 12, 1993; Council on Environmental Quality, Guidance Regarding NEPA Regulations, 48 Fed. Reg. 34263-01, July 28, 1983; Council on Environmental Quality, Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations, 46 Fed. Reg. 18026-01 (March 23, 1981). All CEQ guidance documents not available in the Federal Register are available at <http://ceq.eh.doe.gov/nepa/regs/guidance.html>

¹⁴⁷ Draft Memorandum from Kathleen A. McGinty, Chairman of CEQ, to Heads of Federal Agencies, “Guidance Regarding Consideration of Global Climatic Change in Environmental Documents Prepared Pursuant to the National Environmental Policy Act,”

Accordingly, in addition to amending its NEPA regulations, CEQ should issue a Guidance Memorandum on NEPA Climate Change Analysis, explaining the place of climate change the NEPA process. The CEQ guidance memorandum should cover the following issues:

1. Interpretation of CEQ's existing regulations to encompass climate change analysis

First and foremost, a CEQ guidance memorandum on climate change should explain that NEPA and the CEQ implementing regulations—even without any clarifying amendments—are broad enough in scope to include global climate change and its reasonably foreseeable impacts. The guidance memorandum should denote that climate change is, as discussed above, a “reasonably foreseeable” effect that must be addressed in agency NEPA analyses.¹⁴⁸ The guidance memorandum should also clarify that CEQ interprets the definition of “effects” in 40 C.F.R. § 1508.8—which includes ecological, aesthetic, historic, cultural, economic, social, or health effects—necessarily to encompass those effects on climate change from a proposed project and the effects of climate change on a proposed project. The guidance memorandum should clarify that climate change effects clearly fall within the ambit of ecological, economic, and health effects.

2. Elucidation of the NEPA process: where and how agencies are to integrate climate change analyses

Second, the CEQ guidance memorandum should apply the issue of climate change to each aspect of the NEPA process, elucidating how agencies should integrate climate change

undated, transmitted by Memorandum from Dinah Bear, General Counsel of CEQ, to All Federal Agency NEPA Liaisons, “Draft Guidance Regarding Consideration of Global Climatic Change in Environmental Documents Prepared Pursuant to the National Environmental Policy Act,” October 8, 1997. Available at <http://www.mms.gov/eppd/compliance/reports/ceqmemo.pdf>.

¹⁴⁸See supra pp. 28 - 33 and accompanying footnotes.

analysis into their respective processes.¹⁴⁹

i. Integration of NEPA climate change analyses in the agency planning process

The NEPA process begins at the agency planning stage and requires that environmental considerations be integrated into that planning.¹⁵⁰ CEQ regulations require federal agencies to “integrate the NEPA process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts.”¹⁵¹ The CEQ guidance memorandum should advise that, in complying with NEPA, CEQ regulations, and CEQ climate change guidance, each agency review whether and to what extent its continuing activities and proposed long-term activities directly or indirectly contribute to the emission of greenhouse gases and climate change. Conversely, agencies should also determine whether and to what extent its activities are affected by the consequences of climate change. For example, agencies need to identify those projects and programs which are most sensitive to climate change effects such as higher temperatures, more severe storms, drier or wetter conditions, and sea level rise. Some basic examples are long range decisions concerning issue of agriculture, forestry, and coastal zone resources, or decisions regarding proposed sites for federal facilities.¹⁵²

¹⁴⁹The examples that follow are not intended to be exhaustive. Rather, they are but a few examples the many aspects of the NEPA process in which CEQ could determine that climate change should be addressed.

¹⁵⁰40 C.F.R. § 1501.1(a).

¹⁵¹*Id.* § 1501.2.

¹⁵²For example, the 2002 U.S. Climate Action Report projects a sea level rise of 4-35 inches this century. Climate Action Report, *supra* note 32, at 103. An agency proposing a long-term project in a coastal region would need to consider this potential impact in the NEPA

- ii. *Beginning the NEPA process: Categorical exclusions, Categorical EIS's, Environmental Assessments (EA's) and Findings of No Significant Impact (FONSI).*

Once an agency starts to plan an action it must determine whether it must complete an EIS. Agencies can categorically exclude certain types of actions from needing an EA or EIS if the actions do not individually or cumulatively significantly affect the environment.¹⁵³ A categorical exclusion is not appropriate if it allows an action that carries a potentially significant climate change risk to proceed without, at a minimum, an EA and a threshold impact determination. The CEQ guidance memorandum should direct that agencies review their categorical exclusions, in some cases adopted decades ago, to determine whether those exclusions from NEPA review are still appropriate in light of the risks presented by climate change.

Agencies may also in some cases specify that classes of actions automatically require an EIS.¹⁵⁴ CEQ should direct agencies to review their NEPA implementing regulations to determine whether some classes of actions that pose a plainly “potentially significant” risk of affecting the climate should be reclassified in their own regulations as normally requiring a full EIS rather than just an EA.¹⁵⁵

If the action falls into neither of the above categories, the agency must prepare an EA, which provides the evidence and analysis necessary for the agency to determine whether to

document for the project.

¹⁵³40 C.F.R. §§ 1508.4, 1507.3(b)(2)(ii).

¹⁵⁴Id. § 1507.3(b)(2)(i); see id. §§ 1501.3(a), 1501.4(a)(1).

¹⁵⁵40 C.F.R. §1501.4.

prepare an EIS or a Finding of No Significant Impact (FONSI).¹⁵⁶ An EA must include a brief discussion of both alternatives to the proposed action and the environmental impacts of the proposed action and its alternatives.¹⁵⁷ The CEQ guidance memorandum should clarify that climate change impacts are to be included in an EA's environmental impacts analysis. In an EA, agencies can also consider the effect of mitigation measures in determining whether an EIS is required.¹⁵⁸ The CEQ guidance memorandum should therefore instruct agencies to consider suitable greenhouse gas emission reductions and climate change prevention technologies or techniques as a means to mitigate any adverse impacts identified.

Finally, if the agency finds based on the EA that the proposed action will have no significant impact on the environment, the agency prepares a FONSI explaining why the action will not have the requisite impact.¹⁵⁹ The FONSI must include the EA or a summary of it and note any other environmental documents related to it.¹⁶⁰ The CEQ guidance memorandum should clarify that climate change impacts, as part of the underlying EA's analysis, should be included in a FONSI's analysis or summary. Any climate change prevention measures which contribute to an agency's FONSI must be carried out by the agency or made part of a permit or funding determination.

¹⁵⁶Id. §§ 1501.4(b), 1508.9(a)(1).

¹⁵⁷See id. § 1508.9(b).

¹⁵⁸See, e.g., Spiller v. White, 352 F.3d 235, 241 (5th Cir. 2003) (listing cases); Cabinet Mountains Wilderness/Scotchman's Peak Grizzly Bears v. Peterson, 685 F.2d 678, 682 (D.C. Cir. 1982).

¹⁵⁹40 C.F.R. §§ 1501.4(e), 1508.13

¹⁶⁰Id. § 1508.13.

iii. *The Definition of “Effects”*

CEQ regulations define “effects” to include both direct-effects that are “caused by the action and occur in the same time and place”–and indirect effects–those effects that are “caused by the action but are later in time or farther away in distance, but are still reasonably foreseeable.”¹⁶¹ The regulation delineates the broad range of effects encompassed by the term, including ecological, aesthetic, historic, cultural, economic, social, and health effects.¹⁶² As outlined above in Argument Section IV(A)(1) supra, petitioners herein request that CEQ amend this regulation to expressly include climate change in the range of effects that agencies must consider.¹⁶³ The CEQ guidance memorandum should further explain the place of climate change in agencies’ effects analyses.

NEPA also requires agencies to consider the cumulative impacts of their proposed actions.¹⁶⁴ By definition, cumulative effects must be evaluated along with direct and indirect effects of a project and its alternatives. “‘Cumulative impact’ is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions.”¹⁶⁵ Individually minor but collectively significant actions, taking place over time, can

¹⁶¹Id. § 1508.8.

¹⁶²Id.

¹⁶³See supra pp. 37 -40 and accompanying footnotes.

¹⁶⁴40 C.F.R. § 1508.25(c); Utahns for Better Transp. v. United States Dep't of Transp., 305 F.3d 1152, 1172 (10th Cir.2002); Kern v. United States Bureau of Land Mgmt., 284 F.3d 1062, 1076 (9th Cir.2002); Vill. of Grand View v. Skinner, 947 F.2d 651, 659 (2d Cir.1991).

¹⁶⁵40 C.F.R. § 1508.7.

generate cumulative impacts.¹⁶⁶ Accordingly, the climate change effects of a proposed action should be discussed in any cumulative effects analysis to determine if the project will add to the ongoing problem of climate change.¹⁶⁷ In fact, CEQ has previously cited climate change effects as a component of cumulative atmospheric effects to be addressed by agencies in describing the affected environment of a proposed action:

While describing the affected environment, the analyst should pay special attention to common natural resource and socioeconomic issues that arise as a result of cumulative effects. The following list describes many issues but is by no means exhaustive:

...

*Regional and global atmospheric alterations from cumulative additions of pollutants that contribute to global warming, acidic precipitation, and reduced ultraviolet radiation absorption following stratospheric ozone depletion.*¹⁶⁸

¹⁶⁶Id. A meaningful cumulative impact analysis, according to the D.C. Circuit,

must identify (1) the area in which the effects of the proposed project will be felt; (2) the impacts that are expected in that area from the proposed project; (3) other actions—past, present, and proposed, and reasonably foreseeable—that have had or are expected to have impacts in the same area; (4) the impacts or expected impacts from these other actions; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate.

Grand Canyon Trust v. F.A.A., 290 F.3d 339, 345 (D.C. Cir. 2002).

¹⁶⁷ See City of Los Angeles v. Nat'l Highway Traffic Safety Admin., 912 F.2d 478 (D.C. Cir. 1990). In dissent, Judge Wald lays out grounds for why NEPA is particularly designed to cover analyses of global warming stating, “The future oriented scheme adopted by Congress was designed explicitly to take account of impending as well as present crises in this country and in the world as a whole.” 912 F.2d at 491. In Ctr. for Biological Diversity v. Nat'l. Highway Traffic Safety Admin., 508 F.3d 508 (9th Cir. Nov. 15, 2007) the court concludes by calling Judge Wald’s dissent in City of Los Angeles prescient and persuasive. Id. at 557.

¹⁶⁸Council on Environmental Quality, Considering Cumulative Effects Under the National Environmental Policy Act, 24 (January 1997) available at <http://ceq.eh.doe.gov/nepa/ccenepa/sec3.pdf> (emphasis added).

iv. *The Threshold Determination of When an EIS is Required: “Significantly Affecting the Quality of the Human Environment”*

NEPA requires a “detailed statement” (now known as an EIS) discussing environmental impacts in “every recommendation or report on proposals for legislation and other major Federal actions *significantly affecting* the quality of the human environment.”¹⁶⁹ CEQ regulations define “significantly” in terms of both “context” and “intensity,” giving a non-exhaustive checklist of factors to be evaluated by agencies in determining the latter.¹⁷⁰ As outlined above in Argument Section IV(A)(2) supra, petitioners herein request that CEQ amend this regulation to expressly include climate change impacts as a factor in determining what is a “significant” impact.¹⁷¹ CEQ should concurrently include further guidance in its memorandum regarding the inclusion of climate change impacts in the determination of what is a “significant” impact.

v. *EIS procedures: Scoping*

Scoping is the process of determining the scope of issues related to the proposed action.¹⁷² One purpose of scoping is to identify issues that should be analyzed in-depth in the EIS.¹⁷³ The CEQ guidance memorandum should instruct agencies to include climate change discussion in the scoping process where appropriate; its inclusion would encourage those outside the agency to provide potentially crucial insights into climate change (for example, emission technologies) which might be available for use in connection with the proposal or its possible

¹⁶⁹42 U.S.C. § 4332(2)(C) (emphasis added); see 40 C.F.R. § 1502.3.

¹⁷⁰40 C.F.R. § 1508.27.

¹⁷¹See supra pp. 40 - 42 and accompanying footnotes.

¹⁷²40 C.F.R. §§ 1501.7, 1508.25

¹⁷³Id. § 1501.7(a)(2).

alternatives.¹⁷⁴ Any such information could be more substantively discussed in the appropriate subsequent NEPA documents.

vi. EIS analysis: Environmental Consequences, Alternatives, and Mitigation

The next step in the NEPA process is the preparation of the EIS.¹⁷⁵ The EIS discussions of the environmental consequences of a proposed action and the alternatives to a proposed action are critical sections of an EIS. The CEQ guidance memorandum should clarify that climate change considerations, as reasonably foreseeable effects, would necessarily have to be included in the analysis of the proposed action, the reasonable alternatives to the proposal, and the environmental consequences section of the EIS.¹⁷⁶ First, CEQ regulations require that agencies discuss a list of various types of effects in discussing environmental consequences of a proposed action including: direct and indirect effects of the proposed action and its alternatives; possible land use conflicts; energy effects and conservation potential; natural and depletable resource requirements; urban quality, historic, and cultural resources requirements; and possible alternatives to and mitigation measures of all the environmental consequences.¹⁷⁷ As outlined above in Argument Section IV(A)(3) supra, petitioners herein request that CEQ amend its regulations to expressly include climate change impacts and mitigation measures as a factor of an EIS's environmental consequences discussion section.¹⁷⁸ CEQ should concurrently include

¹⁷⁴See id. at § 1501.7(a)(1).

¹⁷⁵Id. pt. 1502.

¹⁷⁶See id. § 1502.14, 1502.16, 1502.2, and 1502.4. .

¹⁷⁷Id. § 1502.16.

¹⁷⁸See supra pp. 42 - 45 and accompanying footnotes.

further guidance in its memorandum regarding the addition of change impacts to an EIS's environmental consequences analysis. The EIS's environmental consequences analysis would need to include the direct and indirect effects of the proposal and its alternatives on climate change, or "atmospheric resources," and the means of mitigating any adverse climate change effects.

CEQ regulations also require that an EIS rigorously explore and objectively evaluate all reasonable alternatives, the "heart" of the environmental impact statement.¹⁷⁹ The EIS alternatives analysis is based on the information and analysis of the environmental consequences section, but should not duplicate that section; rather it must present the impacts of the proposal and the alternatives in comparative form and provide a basis for choosing between them.¹⁸⁰ The CEQ guidance memorandum should clarify that differences in climate change effects should be considered by agencies in the EIS's alternatives analysis. In fact, CEQ has previously cited climate change as a specific example of the effects to be considered in a model reasonable alternatives analysis:

Specifically, the proposed action and reasonable alternatives (including the no action alternative) could affect different resources and could effect them in different ways. . . . For example, the effects of coal-fired electric plants are most often related to coal-mining activities, the release of heated water to nearby water bodies in the cooling process, and the release of a variety of pollutants (*including greenhouse gases*) to the air during combustion. Nuclear plants also release heated water but they release radioactive materials to the air instead of *greenhouse gases*.

Other past, present, or future actions also should be included in the analysis if evaluation of the cause-and-effect relationships identifies additional stresses

¹⁷⁹40 C.F.R. § 1502.14(a).

¹⁸⁰Id. § 1502.14.

affecting resources, ecosystems, and human communities of concern.¹⁸¹

Yet another place for climate change analysis should be in agency EIS mitigation analyses: Mitigation measures include any steps to avoid, mitigate, minimize, rectify, reduce, or eliminate the impact associated with a proposed agency action.¹⁸² CEQ should instruct that climate change impacts or effects,¹⁸³ as a reasonably foreseeable effect, should also be an important component of any mitigation calculus of the adverse impacts of a federal action.

vii. The Record of Decision (ROD)

Finally, when an agency reaches a decision on an action for which an EIS was completed, the agency must prepare a public record of decision (ROD).¹⁸⁴ The ROD must provide information on the alternatives considered, the factors weighed in the decision-making process, and the most environmentally preferable alternative.¹⁸⁵ The CEQ guidance memorandum should discuss how agencies should integrate climate change factors into the ROD analysis.

The ROD must also state whether all practicable means to avoid or minimize environmental harm were adopted, and if not, why they were not.¹⁸⁶ Inclusion of climate change considerations would therefore be necessary in the ROD analysis mitigation section. Further, the

¹⁸¹Council on Environmental Quality, Considering Cumulative Effects Under the National Environmental Policy Act, 38 (January 1997) available at <http://ceq.eh.doe.gov/nepa/ccenepa/sec4.pdf> (emphasis added).

¹⁸²See 40 C.F.R. § 1508.20.

¹⁸³CEQ regulations denote that “effect” is synonymous with “impact.” See id. § 1508.8(b).

¹⁸⁴Id. § 1505.2.

¹⁸⁵Id. § 1505.2(b).

¹⁸⁶Id. § 1505.2(c).

same CEQ regulation requires agencies to adopt a monitoring and enforcement program where applicable for mitigation.¹⁸⁷ These requirements for the ROD and for monitoring and enforcement are an effective means to inform the public of the extent to which climate change is included in a decision and to outline how measures to reduce GHG emissions or otherwise mitigate climate change impacts should be implemented. The CEQ memorandum should include guidance to agencies to that effect.

3. Instruct agencies to promulgate or amend their own NEPA implementing regulations and other internal guidance documents to include climate change analyses

In addition to requiring compliance with CEQ's own regulations, the CEQ guidance memorandum on climate change should include instruction to agencies on promulgating or revising their own regulations and internal guidance documents to mandate the inclusion of climate change analysis, in order to ensure full compliance with the purposes and provisions of NEPA and CEQ regulations.¹⁸⁸ More specifically, CEQ should direct agencies to ensure that adequate internal NEPA guidance is available to personnel on climate issues specific to each agency. This could include new agency NEPA implementing regulations, internal guidance orders or directives, and revisions to agency handbooks, manuals, and written policies. One straightforward revision is the addition of climate change to the checklist of critical elements of the human environment that the agency uses in preparing NEPA documents. Another is for agencies to conduct internal reviews on whether some of their agency actions that pose climate change risks are being ignored as related to their NEPA compliance. CEQ should direct that

¹⁸⁷Id. § 1505.2(c).

¹⁸⁸Id. § 1507.3. This internal agency review should include the review of those classes of actions currently granted categorical exclusions and categorical EIS, as discussed above in Argument Section IV(B)(2)(ii) supra, pp. 49-50.

agency reviewers determine whether customary internal practices related to climate change risks vary among different regions and/or vary among the different agency departments or bureaus.

New policies may be necessary to ensure consistent NEPA compliance.

C. Other CEQ Options

Lastly, CEQ has previously acted to address areas of NEPA concern in other ways. In some instances, CEQ has issued lengthy reports or handbooks on other overarching topics.¹⁸⁹ In one case, CEQ created a task force to review NEPA practices and provide recommendations on how agencies can better integrate NEPA into federal agency decision making and make the NEPA process more effective.¹⁹⁰ Climate change is arguably the most serious, challenging, and far-reaching environmental concern we as a nation and a planet must address. A climate change analysis will likely be required in many different types of situations, by many different types of agencies.

Nonetheless, given the broad consensus of scientific evidence, the severity of the environmental effects, and the urgency of the problem,¹⁹¹ petitioners strongly urge CEQ to only

¹⁸⁹Council on Environmental Quality, Environmental Justice: Guidance under the National Environmental Policy Act, December 10, 1997, available at <http://ceq.eh.doe.gov/nepa/regs/ej/justice.pdf> ; Council on Environmental Quality, NEPA - A Study of Effectiveness After 25 Years Council on Environmental Quality, January 1997, available at <http://ceq.eh.doe.gov/nepa/nepa25fn.pdf> ; Council on Environmental Quality, Considering Cumulative Effects Under the National Environmental Policy Act, January 1997, available at <http://ceq.eh.doe.gov/nepa/ccenepa/ccenepa.htm> ; Council on Environmental Quality, Incorporating Biodiversity Considerations Into Environmental Impact Analysis Under the National Environmental Policy Act, January 1993, available at <http://www.eh.doe.gov/nepa/tools/guidance/Guidance-PDFs/iii-9.pdf>.

¹⁹⁰See National Environmental Policy Act Task Force, <http://ceq.eh.doe.gov/ntf/index.html>

¹⁹¹See, e.g., supra note 68 (joint NAS statement).

act in the above manner in conjunction with the two ways outlined above: amending the CEQ regulations to include specific language on climate change and issuing a guidance memorandum mandating that the agencies address climate change in order to properly comply NEPA and CEQ regulations.

CONCLUSION

In its varied roles as regulator, policy-maker, manager of federal lands, grantor of federal funds, operator of federal facilities, and consumer, the federal government is in a position to help lead the nation and the world's efforts to slow climate change and its adverse environmental effects. The federal government is a major energy consumer and therefore a major source of greenhouse gas emissions. Many major federal actions are of a very large scale, often involving planning and operations over decades. For these reasons and others, it is critical that federal agencies take into account climate change in their decision making. The extent to which climate change is considered in future NEPA analyses of federal actions will strongly affect the extent to which climate change and its consequential dangers to our nation are limited or avoided in the coming century.

Indeed, the foundational policy goals of NEPA demand that the agencies act to slow climate change and its current and future adverse environmental impacts. Congress directed federal agencies to “use all practical means . . . to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may . . . attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences.”¹⁹² NEPA also makes demands that federal agencies

¹⁹²42 U.S.C. § 4331(b)(3).

“fulfill the responsibilities of each generation as trustee of the environment for succeeding generations,” a responsibility that should make slowing the emission of greenhouse gases causing climate change a top priority.¹⁹³ Finally, Congress also recognized the “world-wide and long-range character of environmental problems” in NEPA and directed agencies to assist other countries, when consistent with U.S. foreign policy, in “anticipating and preventing a decline in the quality of mankind’s world environment.”¹⁹⁴

Federal agencies are bound, not only by statute, but also by international treaty, to address climate change. The United States is a signatory of The United Nations Framework Convention on Climate Change (“UNFCCC”),¹⁹⁵ which formally acknowledged the problem of global warming and set an ultimate goal of objective of stabilizing greenhouse gas emissions “at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system.”¹⁹⁶ Countries ratifying the treaty agreed to take climate change into account in such matters as agriculture, industry, energy, natural resources, and activities involving sea coasts.¹⁹⁷

¹⁹³42 U.S.C. § 4331(b)(1)

¹⁹⁴42 U.S.C. § 4332(2)(F).

¹⁹⁵UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, May 9, 1992, S. Treaty Doc. No. 102-38, reprinted in 1771 UNTS 107; (1992) 31 ILM 849, available at <http://unfccc.int/resource/docs/convkp/conveng.pdf>. President Bush signed the Convention on June 12, 1992, the U.S. Senate ratified it on October 15, 1992, and the Treaty entered into force on March 21, 1994. See UNFCCC, United Nations Framework Convention on Climate Change: Status of Ratification (last modified May 24, 2004), available at <http://unfccc.int/resource/conv/ratlist.pdf>.

¹⁹⁶Id. Art. 2.

¹⁹⁷See generally id. Art. 4

Signatory countries agreed to develop national programs to slow climate change.¹⁹⁸ The United States participated in the 2005 G8 Meetings at Gleneagles, Scotland, signing a communiqué with the other participating nations on climate change.¹⁹⁹ The G8 nations agreed to “act with resolve and urgency now” to address climate change.²⁰⁰ In September 2007 President Bush hosted a climate summit for the world’s seventeen largest GHG-emitting nations. In his address at the opening of the conference, President Bush acknowledged the work of the IPCC and declared, “Energy security and climate change are two of the great challenges of our time. The United States takes these challenges seriously. The world’s response will help shape the future of the global economy and the condition of our environment for future generations.... We must lead the world to produce fewer greenhouse gas emissions.”²⁰¹

In order to fulfill these responsibilities, agencies must take every opportunity to include climate change considerations in their planning and decision-making processes. Agencies should document those considerations in any EISs or EAs prepared for those actions. Agencies should promulgate and revise their own regulations, policies, and guidance to include climate change, in consultation with CEQ, and ensure that any CEQ guidance is fully incorporated into those new or revised regulations, policies, and guidance. However, the logical prerequisite for this needed sea change in general agency NEPA policy and procedure is guidance from CEQ.

¹⁹⁸ Id. Art. 4, sec. 1(b).

¹⁹⁹ THE GLENEAGLES COMMUNIQUE ON AFRICA, CLIMATE CHANGE, ENERGY AND SUSTAINABLE DEVELOPMENT, G8 Summit, July 8, 2005, available at http://www.fco.gov.uk/Files/kfile/PostG8_Gleneagles_Communique,0.pdf

²⁰⁰ Id. at 2. The agreement also included an action plan covering climate change, clean energy and sustainable development. Id.

²⁰¹ <http://www.whitehouse.gov/news/releases/2007/09/20070928-2.html>

In summary, NEPA is the mechanism through which agencies must address climate change. CEQ is entrusted with providing binding instruction on NEPA compliance.

WHEREFORE for the reasons contained herein, petitioners respectfully request that the CEQ undertake the following actions:

- I. Amend CEQ's NEPA regulations to include language on the inclusion of climate change effects analysis in agency environmental compliance documents. These amendments should include, but are not limited to: the amendment of 40 C.F.R. § 1508.8, defining what is an "effect" for purposes of NEPA, to include reference climate change impacts; the amendment of 40 C.F.R. § 1508.27, defining "significantly" to include climate change impacts as a factor in determining the significance of a project's impacts; and the amendment of 40 C.F.R. § 1502.16, delineating what environmental consequences agencies shall discuss in an EIS, to include reference to climate change impacts.
- II. Issue a Guidance Memorandum on climate change analysis. The Guidance Memorandum should include instructions to agencies on how, where, and when to integrate climate change analyses into their respective NEPA processes.

In accordance with the APA, CEQ's response to this petition is required in a timely manner.²⁰²

²⁰²See 5 U.S.C. § 555(b) (requiring that an agency "within a reasonable time . . . proceed to conclude a matter presented to it"); *id.* § 553(e) (requiring that "[p]rompt notice shall be given of the denial in whole or in part of a written application, petition, or other request of an interested person made in connection with any agency proceeding. Except in affirming a prior denial or when the denial is self-explanatory, the notice shall be accompanied by a brief statement of the grounds for denial."); *id.* § 706(1) (requiring that a reviewing court shall "compel agency action unlawfully withheld or unreasonably delayed").

Respectfully submitted,

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APPENDIX OF SUPPORTING MATERIALS
(provided in electronic form)

IPCC, Fourth Assessment Report, Summ. for Policymakers of the Synth. Report (2007)

Statement of Amer. Geophysical Union: Human Impacts on Climate (2007)

Statement of the Amer. Meteorological Society; Climate Change (2007)

MA Exec. Office on Env'tl. Affairs; MEPA Greenhouse Gas Policy & Protocol (2007)

King Co., WA: Exec. Order on the Evaluation of Climate Change Impacts (2007)

Statement of Amer. Assoc. for the Advancement of Science: Climate Change (2006)

Statement of Science Academies: Joint Global Response to Climate Change (2005)

U.S. Climate Action Report 2002 (2002)

National Research Council, Climate Change Science (2001)

CERTIFICATE OF SERVICE

I hereby certify that a copy of this legal petition, and all materials in support thereof, was served this _____ day of _____ by hand delivery and first class mail and/or other document delivery service to:

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In addition, this document (without appendices) was delivered in electronic format via electronic mail to following individuals:

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