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Subject: National Petrochemical & Refiners Association's Comments on the Environmental Protection Agency's ("EPA's") Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act Proposed Rule, 78 Fed. Reg. 18,886 (Apr. 24, 2009).

Dear Sir/Madam:

National Petrochemical & Refiners Association ("NPRA") is providing comments on EPA's Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act Proposed Rule ("Proposed Findings"), referenced above. NPRA comprises of more than 450 companies, including virtually all U.S. refiners and petrochemical manufacturers. Our members supply consumers with a wide variety of products and services that are used daily in homes and businesses. These products include gasoline, diesel fuel, home heating oil, jet fuel, asphalt products, and the chemicals that serve as "building blocks" in making plastics, clothing, medicine, and computers.

Like virtually every other industrial sector, NPRA's members emit greenhouse gases ("GHGs") as a result of their manufacturing activities. They also manufacture and/or refine products that release GHGs when used or combusted by downstream users. As such, NPRA's members have a great interest in, and will be directly and indirectly impacted by, EPA's Proposed Findings.

I. Introduction

NPRA's comments on EPA's Proposed Findings fall within three general categories: (1) EPA's selective use of science and its failure to identify and address key uncertainties and assumptions in models it relies upon; (2) EPA's legal authority, including the lack of basis for its findings with respect to human health, failure to consider adaptation and other reasonable human behavior, and its flawed approach to defining terms under the Clean Air Act, such as "pollution" and "pollutant;" and (3) EPA's policy considerations, including its failure to consider



implications of an unnecessarily broad endangerment finding. Detailed comments on each of these topics are discussed below.

II. Comments on EPA’s Use of Science

A. EPA Has Failed to Consider Relevant Science Contradicting the Proposal’s Conclusions

In evaluating whether GHGs are endangering public health or welfare, Administrator Jackson is obligated to consider, among other things, all pertinent information, including data both supporting and rejecting the existence and causes of climate change, as well as potential positive and negative impacts that might flow from climate change. EPA has not met this obligation here because it fails to consider as part of its endangerment analysis a number of relevant, credible, and peer-reviewed studies that have been published since the Intergovernmental Panel on Climate Change (“IPCC”) released its Fourth Assessment or that otherwise undermine the conclusions drawn in EPA’s Proposal. In particular, before EPA can make a valid endangerment finding, it must at least fully consider the findings in the studies listed in **Attachment A**.

B. EPA Has Not Justified Reliance on the Various Models Underlying the Synthesis Reports Supporting Its Proposed Findings

EPA has not employed any models firsthand to support its Proposed Findings. Rather, the agency relies on a series of synthesis reports – including some conducted by the IPCC, the U.S. Climate Change Science Program (“CCSP”), and the National Research Council (“NRC”) – which, in turn, assess various individual studies that employ different models. EPA has “undoubted power to use predictive models” . . . provided it “explain[s] the assumptions and methodology used in preparing the model[s]” and “provides a complete analytic defense should the model[s] be challenged.” *Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1052 (D.C. Cir. 2001) (internal quotations omitted); *Eagle-Pitcher Industries, Inc. v. EPA*, 759 F.2d 905, 921 (D.C. Cir. 1985); *Small Refiner Lead Phase-down Task Force v. EPA*, 705 F.2d 506, 535 (D.C. Cir. 1983). Moreover, while courts generally defer to agency modeling, “model assumptions must have a rational relationship to the real world.” *West Virginia v. EPA*, 362 F.3d. 861, 866-7 (D.C. Cir. 2004).

EPA has not set forth in a complete and transparent manner the assumptions and methodologies used in preparing the models underlying the synthesis reports on which its Proposed Findings admittedly rely.¹ Indeed, EPA’s Proposed Findings lack any discussion of

¹ Because EPA’s Proposed Findings rely on a series of synthesis reports, each of which draws on individual reports that often employ different models, nowhere does EPA actually identify or defend the full suite of models upon which its Proposed Findings are purportedly based. All models should be clearly identified and comprehensively discussed, including their weaknesses and input assumptions. This includes, for example, models used to project future GHG

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models, and the Technical Source Document (“TSD”) accompanying the Proposed Findings discusses models in only the most cursory way, leaving the public with very little understanding of the possible limitation of models used to generate conclusions in the synthesis reports. This omission is especially serious considering that the models underlying the synthesis reports are much more complex than the models typically used by the agency, which involve local and regional pollutant emissions and associated impacts at the local and regional scales. The models in the synthesis reports take into consideration *global* emissions and *global* biological, chemical, and physical processes to make projections at the *global* scale.

With respect to projecting future GHG emissions, the TSD mentions (p. 46) three models used in a CCSP assessment, stating simply that “modeling teams used model input assumptions they considered *meaningful and plausible*. The resulting scenarios provide insights into how the world might evolve without additional efforts to constrain GHG emissions, given *various assumptions* about principal drivers of these emissions such as population increase, economic growth, land and labor productivity growth, technological options, and resource endowments” (first emphasis in original, second emphasis added). Aside from identifying that “various assumptions” were made about certain topics, the TSD does not attempt to describe *what* the assumptions are and *defend* why each assumption is reasonable. Likewise, the TSD acknowledges (p. 47) that the IPCC used models to generate emissions projections, but simply states that the “*underlying assumptions . . .* across all scenarios, and across all modeling teams that produced the scenarios, *can be found in IPCC (2000)*. The range of GHG emissions in the scenarios widen over time to reflect *uncertainties in the underlying drivers*” (emphasis added). Thus, the public is left with virtually no understanding of the assumptions and uncertainties in the models upon which EPA’s Proposed Findings are based.²

The TSD’s minimal discussion of highly complex climate models is, likewise, so superficial and over-generalized that it does not provide a basis on which to assess the rationality of EPA’s decision-making. The TSD acknowledges (p. 52) that “computer models form the basis for projections of future changes in temperature, precipitation and sea level at global and regional scales” and that “models continue to have significant limitations, such as their representation of clouds, which lead to uncertainties in the magnitude and timing, as well as

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emissions, future warming scenarios, and future impacts on such things as temperature, storm and precipitation patterns, and sea level.

² The variety of assumptions and range of uncertainties in the models upon which EPA relies are significant and should be made completely apparent and opened to public scrutiny if they are to become the basis for U.S. governmental decision-making. The TSD acknowledges (p. 53) that emissions scenarios are critical to projections about future temperatures, especially by mid-century; and, by the end of the century, projected temperatures vary “significantly” by emissions scenario. For example, the TSD states that under the various IPCC scenarios, taking the uncertainty range into account, warming could be within a range of 2.0 to 11.5 degrees Fahrenheit. Thus, EPA must explicitly account for the uncertainties and defend the assumptions in the IPCC scenarios, and all others upon which relies.



regional details, of predicted climate change.” However – in part because EPA never specifies which climate models its Proposed Endangerment Finding actually rests on – EPA does not discuss the limitations of models relied on by the agency and does not mention any other limitations in the models aside from their “representation of clouds.” Equally important, EPA does not explain the *consequences* of the limitations of the various models. Finally, the TSD (pp. 52-53) talks peripherally about problems or uncertainties in climate models relating to projections of precipitation, clouds and aerosols, but does not explain the extent of these uncertainties in the models relied upon by EPA and, again, does not explain the consequences of existing uncertainties on EPA’s Proposed Findings.

Some commenters on EPA’s Advance Notice of Proposed Rulemaking on Greenhouse Gases (“Advance Notice”), 73 Fed. Reg. 44,354 (July 30, 2008), raised important concerns that the climate models used in various synthesis reports – particularly those that form the bases for the IPCC’s assessments – do not, in fact, bear a relationship to the real world because, for example, they do not consider solar dimming and brightening, do not accurately model the role of clouds, do not simulate a possible negative feedback from water vapor, do not accurately represent temperature changes in the upper troposphere, and cannot produce reliable predictions of regional climate change. *See, e.g.*, Comment submitted by Dr. Patrick J. Michaels, Cato Institute and University of Virginia, et al., EPA-HQ-OAR-2008-0318-1388.1. If EPA cannot analytically defend the models it uses or if the results of such models are contradicted by the real world, then reliance on such models is arbitrary and capricious. At the very least, EPA must acknowledge and address the inherent weaknesses of the models that underpin the assessments that EPA relies upon and how those weaknesses factor in to EPA’s analysis.

C. EPA Impermissibly Bases Its Proposed Findings on Impacts Outside of the United States

A significant limitation of EPA’s Proposed Findings is their lack of reliance on scientific evidence specific to the United States. EPA appears to partly mask this limitation by overstating the availability and confidence of scientific projections regarding U.S. impacts. For example, the Proposed Findings suggest that the assessments from which EPA draws its conclusions have made definitive statements with respect to U.S. impacts from climate change, such as a “fundamental[] rearrange[ment] of U.S. ecosystems” and “progressive inundation” from sea-level rise “along much of the U.S. coast.” 78 Fed. Reg. at 18,902-03. However, these conclusions are derived from the IPCC’s projections for North American impacts as a whole, not U.S. impacts specifically (TSD, pp. 89, 111). A projection made with respect to a large regional area does not necessarily hold true for a smaller segment of that area in isolation. EPA’s Proposed Findings should be revised to clarify whenever the agency is relying on generalized projections made at a scale beyond the U.S. alone (*i.e.*, North American or global impacts). The Agency’s final actions must rest on evidence relevant to the United States.

D. EPA’s Proposed Findings Fail to Identify and Quantify Health-Health Tradeoffs

EPA should attempt to more thoroughly characterize, using numbers and ranges, the health and welfare impacts identified in its Proposal, to the extent feasible, so that health-health



and other tradeoffs in any climate change decision are transparent and can be debated publicly. EPA's Proposed Findings suggest that there are both negative and positive health impacts that may be associated with climate change. Potential benefits may include decreases in frost and cold days and nights, as well as increased productivity of certain crops and forest growth. An endangerment finding and subsequent regulation of GHGs may eliminate or reduce these benefits, and the agency should, therefore, consider them in its endangerment analysis. *See* Cass Sunstein, *Risk and Reason* 150 (2002) ("Agencies ought to be required to show that they are doing more good than harm. . . . [C]ourts should take a 'hard look' at agency decisions failing to undertake health-health comparisons.").

EPA has not attempted to provide data that would enable the public to comprehensively assess, in quantity or degree, the public health impacts that might flow from climate impacts – both positive and negative. *See* First Round of Office of Management and Budget Comments to USEPA on the Proposed Findings ("OMB Comments"), EPA-HQ-OAR-2009-0171-0124, at 1-2 (noting that the health finding "could be strengthened by including additional information on benefits, costs, and risks").³ For example, although EPA's health finding is contingent on alleged impacts arising from increases in severity of storms and heavy rainfall events, EPA has not attempted to present a range of likely, specified effects associated with those impacts on the health of the U.S. population. Although precise quantification of human health impacts may not be possible or necessary, EPA is far short of presenting the kind of information that would enable an understanding and overall assessment of possible impacts. *See id.* at 3 (noting that the Proposed Finding "would appear more balanced if it also highlighted whether particular regions of the U.S. would benefit, and to what extent these positive impacts would mitigate negative impacts elsewhere in the United States").

Not only does the Administrator fail to provide any metrics against which the public can assess the overall impacts identified in the Proposed Findings, but the Administrator is entirely unclear regarding the process used to make her decisions because the Proposed Findings do not specify *any method* used by the Administrator to assess the vast array of information and effects discussed. *See* OMB Comments at 1 (suggesting that EPA "*articulate* more clearly *how* the Administrator weighed the scientific evidence related to each impact or *how/whether* she gave more or less weight to particular impacts . . . and *how* she weighed uncertainty in her deliberations") (emphasis added); *id.* at 2 (suggesting that EPA include in its Proposal the "[m]ethodology or methodologies used for weighing risks and various outcomes and the risks associated with each"). Aside from stating that the Administrator is relying heavily on certain synthesis reports by the IPCC, CCSP, and NRC, the Proposed Findings and the TSD do not reveal how much the Administrator credited each of those reports and on what basis. Instead, the Administrator simply states:

³ While EPA has stated that it does not believe it is now possible to quantify the overall effects of reduced cold-related mortality and increased heat-related mortality that may accompany climate change, these are the only impacts that EPA has explained its attempt to quantify. 74 Fed. Reg. at 18,901. EPA has not attempted, or explained why it is not possible, to quantify other impacts. The agency should make a reasonable effort to do so.



Based on the total weight of evidence . . . it is the Administrator’s judgment that current and projected levels of the mix of six greenhouse gases endanger the public health and welfare of current and future generations. The Administrator’s proposed endangerment finding is based on the entire range of observed risks and potential harms to public health and welfare. The Administrator is not basing her proposal on any one impact, but instead is weighing the evidence collectively and determining that as a whole it clearly indicates that the air pollution at issue endangers public health and welfare now and in the future.

78 Fed. Reg. at 18,898. Given the enormous scope and complexity of the issues presented in the Proposed Findings, these statements lack a clearly articulated and reasoned approach.

E. EPA Fails to Properly Characterize Greenhouse Gases

EPA’s Proposed Endangerment Finding does not give due consideration to *all* of the properties of GHGs – properties that make GHGs unlike all other pollutants for which EPA has made an endangerment finding. As the IPCC has noted, “Without the natural greenhouse effect, the average temperature at the Earth’s surface would be below the freezing point of water and thus Earth’s natural greenhouse effect makes life as we know it possible.”⁴ EPA should add a clear and comprehensive discussion to the Proposed Findings and the TSD about the importance of the greenhouse effect to maintenance of life-supporting temperatures, as well as other important properties of GHGs, including their positive effects on the productivity of certain crops, fisheries, and forests.

F. EPA Fails to Explain the Extent to Which Its Proposed Findings Are Based Upon Extreme Climate Change Events

EPA must clarify the extent to which the Administrator is relying on low-probability extreme events in her Proposed Endangerment Finding. The Proposal states,

In the context of climate change . . . the Administrator should take account of the most catastrophic scenarios and their probabilities. . . . [H]owever, it is not necessary to rely on low-probability outcomes in order to find endangerment here.

⁴ Le Treut, H., R. Somerville, U. Cubasch, Y. Ding, C. Mauritzen, A. Mokssit, T. Peterson and M. Prather, 2007: Historical Overview of Climate Change. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)). Cambridge University Press, Cambridge, U.K. and New York, N.Y., USA (available at http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1_Print_Ch01.pdf).



78 Fed. Reg. at 18,890. Despite the statement that reliance on low-probability events is “not necessary” to EPA’s Proposal, the TSD goes on to describe certain low-probability extreme events like uncommon floods, hurricanes, and dramatic sea-level rises resulting from the collapse of ice sheets (*see, e.g.*, TSD, pp. 35-6, 61, 71, 85, 98, 103, 120). Based on the Administrator’s ambiguous statements and the content of the TSD, it is not clear whether the Administrator does in fact rely on low-probability extreme outcomes or the extent to which they are considered. If the Administrator is not relying on speculative or low-probability impacts for her Proposed Findings, EPA should explicitly say so and should reduce the many references to them in the Proposal because otherwise they serve simply to generate irrational fear in the public. Finally, EPA should revise its discussion of extreme events and abrupt climate change to reflect new scientific evidence, published in the journal *Science*, which suggests sea-level rise associated with the melting of the West Antarctic Ice Sheet is not likely to be as extreme as previously thought and would occur slowly over the course of many centuries.⁵

III. Comments on EPA’s Legal Foundation

A. EPA’s Proposed Definition of Pollution is Flawed

1. EPA’s definition of pollution is inappropriate for gases that are necessary to maintaining life, and it would lead to absurd results.

EPA must recognize that there are natural levels of GHGs in the atmosphere that are necessary to sustain the environment, and thus EPA has an obligation to define an atmospheric concentration above which there is endangerment. EPA’s proposal to find that the mere presence of six specific GHGs (carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, perfluorocarbons, and hydrofluorocarbons) in the air constitutes “pollution” that is endangering human health and welfare is unnecessarily overbroad and could lead to unintended consequences. The potential adverse consequences of the Administrator’s Proposed Endangerment Finding are apparent from a simple example: If we were able to develop the technological capability to return GHG levels in the atmosphere to their pre-industrial concentrations, under the Administrator’s proposed definition of “pollution,” their presence in the air would still be endangering public health and welfare, and EPA might be forced to regulate sources that contribute to the endangerment. This defies common sense and is not what was intended by Congress.

Although EPA proposes to list six GHGs collectively as “pollution,” the Administrator repeatedly suggests that it is only “elevated” levels of GHGs that create endangerment, not their

⁵ Jonathan L. Bamber, Riccardo E. M. Riva, Bert L. A. Vermeersen and Anne M. LeBroq. Reassessment of the Potential Sea-Level Rise from a Collapse of the West Antarctic Ice Sheet. *Science*, 2009; 324 (5929): 901 DOI (available at <http://www.sciencemag.org/cgi/content/abstract/324/5929/901>).



simple existence in the ambient air. *See, e.g.*, 74 Fed. Reg. at 18,901 (“All public health risks and impacts described here as a result of *elevated* atmospheric concentrations of greenhouse gases occur via climate change.”) (emphasis added); *id.* at 18,896 (“[A]ll current and future risks due to human-induced climate change—whether these risks are associated with increases in temperature, changes in precipitation, a risk in sea levels, changes in frequency and intensity of weather events, or more directly with the *elevated* greenhouse gas concentrations themselves – can be associated with this definition of ‘air pollution.’”) (emphasis added). Moreover, the Administrator’s Proposed Endangerment Finding is premised on the assumption that GHG concentrations will rise in the future. *Id.* The Administrator’s emphasis on “elevated” concentrations of GHGs begs the question and places the burden on the Administrator to define the level above which GHGs are dangerous.

The Administrator’s Proposed Finding that *current* concentrations of six GHGs are causing an endangerment is unprecedented and inconsistent with domestic and international policy. Congress’s current and past approach to GHGs has been to acknowledge and make room for at least some rise in current global GHG concentrations. For example, the goal of the American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. (2009), currently being debated in Congress, is to stabilize the atmospheric concentration of carbon dioxide at 450 ppm, which is higher than the current concentration of about 387 ppm. *See id.* § 705(e)(2)(a) (requiring EPA to submit reports periodically to assess whether U.S. actions, together with international actions, are sufficient to avoid atmospheric greenhouse gas concentrations above 450 ppm carbon dioxide equivalent). Thus, Congress does not believe that concentrations of GHGs are so threatening to human health and welfare that they need to be reduced to below current levels. To be consistent with U.S. policy, EPA should revise its proposed “pollution” definition to indicate that current levels are not an endangerment to human health and welfare, and it should specify a level above which there is actual endangerment.

2. EPA cannot lawfully exclude from its definition of pollution certain GHGs, like water vapor, which are accounted for in the models on which its Proposed Endangerment Finding relies.

EPA states that it is excluding certain constituents – including water vapor, tropospheric ozone, ozone-depleting substances, and black carbon – from its proposed definition of “pollution” for various “policy” and “scientific” reasons. 78 Fed. Reg. at 18,897. But some of these substances, particularly water vapor, play a significant role in the greenhouse effect. According to the Energy Information Administration, “Given the present composition of the atmosphere, the contribution to the total heating rate in the troposphere is around 5 percent from carbon dioxide and around 95 percent from water vapor.”⁶

⁶ Greenhouse Gas Spectral Overlaps and Their Significance, Appendix D, *Alternatives to Traditional Transportation Fuels 1994*, Vol. 2, Greenhouse Gas Emissions, Energy Information Administration (available at: http://www.eia.doe.gov/cneaf/alternate/page/environment/appd_d.html).



It would likewise be inappropriate for EPA to exclude a consideration of other gases with a lesser impact on the greenhouse effect, given that EPA’s Proposed Contribution Finding suggests that extremely small effects from individual GHGs could support a contribution finding under section 202. 74 Fed. Reg. at 18,907 (“If the U.S. and the rest of the world are to combat the risks associated with global climate change, contributors must do their part *even if their contributions to the global problem, measured in terms of percentage, are smaller than typically encountered* when tackling solely regional or local environmental issues.”) (emphasis added). Furthermore, to the extent EPA relies on models that include constituents other than the six GHGs identified by EPA to project future impacts, those constituents must also be included in EPA’s “pollution” analysis and definition. Otherwise, EPA’s use of those models is arbitrary because the models do not support a conclusion that there are impacts, and thus endangerment, *solely* from six gases.

Finally, to the extent that EPA’s decision not to include other constituents with climate forcing potential in its “pollution” definition is based on “policy” reasons, that decision is unlawful. *See* 74 Fed. Reg. at 18,896-97 (“There are other greenhouse gases and aerosols that have warming (and cooling) effects but are not being included in the proposed definition of air pollution. . . . For each of these substances, there are different scientific and *policy reasons* why those substances are not being included in the proposed definition of air pollution for purposes of section 202(a).”) (emphasis added). As the Supreme Court explained in *Massachusetts v. EPA*, there is no room for policy judgments in EPA’s endangerment decision. 127 S.Ct. 1438, 1463 (2007).

B. EPA’s Proposed Human Health Endangerment Finding is Flawed

EPA cannot rely on human health impacts resulting from projected climate impacts – which are defined as “welfare” effects under the Clean Air Act, *see* 42 U.S.C. § 7602(h) – to support a public health endangerment finding. The indirect health effects identified by EPA that occur via climate change are not the kinds of public health impacts that Congress intended for EPA to consider separately in a public health endangerment finding. Instead, Congress intended for EPA to consider risks to public health as risks that result from direct exposure to a pollutant. *See, e.g.*, H.R. Rep. No. 95-294, at 49-50 (1977) (“By use of the words ‘cause or contribute to air pollution,’ the committee intends to require the Administrator to consider all sources of the contaminant which contributes to air pollution and to consider all sources of *exposure* to the contaminant – food, water, air, etc.—in determining health risks.”) (emphasis added); S. Rep. No. 91-1196, at 7 (1970) (“Knowledge of the relationship between the *exposure* to many air pollution agents and acute and chronic health effects is sufficient to develop air quality criteria related to such effects.”); *id.* (“The protection of the public health and welfare requires definitive knowledge of the causal relationship between *exposure* to air pollution agents—single or in combination—and health or welfare under varying environmental conditions.”) (emphasis added); *id.* at 10 (“Ambient air quality is sufficient to protect the health of such persons whenever there is an absence of adverse effect on the health of a statistically related sample of persons in sensitive groups from *exposure* to the ambient air.”) (emphasis added).

EPA’s decision to characterize impacts that occur via climate change as human health effects is also inconsistent with its past approach, which has been to treat indirect health effects



as welfare effects. For example, EPA characterized tropospheric ozone’s effects on UVB-induced human diseases – as well as its effects on climate change – as welfare effects in the criteria document for ozone, even though the agency acknowledged significant health effects such as erythema (*i.e.*, sunburn) and skin cancer. *See* National Center for Environmental Assessment, *Air Quality Criteria for Ozone and Related Photochemical Oxidants*, Vol. 1, at E-3, E-30 through E-33, Chapter 10 (2006).⁷ Similarly, EPA characterized “risks to human health” from toxins released by algal blooms due to excess nitrogen as “ecological and other welfare effects” in the criteria document for oxides of nitrogen and sulfur. *See* National Center for Environmental Assessment, *Integrated Science Assessment for Oxides of Nitrogen and Sulfur—Ecological Criteria*, 3-150, Table 4-31 (2008).⁸

C. EPA Impermissibly Relies on Ozone Impacts in Its Proposed Human Health Endangerment Finding

EPA cannot base a human health endangerment finding on a consideration of the impacts of climate change on ozone pollution, which the agency regulates separately. EPA’s Proposal appears to place significant weight on projected adverse impacts associated with tropospheric ozone pollution (*i.e.*, smog) to support its proposed human health endangerment finding, as well as aspects of the proposed welfare endangerment finding – *e.g.*, impacts on crops and forests. 78 Fed. Reg. at 18,902; *see also* TSD, pp. 75-79. The Proposed Findings conclude that climate change is expected to worsen U.S. regional ozone pollution, with associated risks in respiratory infection, aggravation of asthma, and premature death. 78 Fed. Reg. at 18,901. But, as EPA admits, it already regulates ozone as a criteria pollutant under the Clean Air Act. *Id.* *See also* OMB Comments at 1 (“Since tropospheric ozone is already regulated under the Clean Air Act, EPA should explain why those regulations are inadequate to protect public health from the ozone impacts of climate change.”).

EPA’s reliance on the effect of climate change on ozone to support its Proposed Findings is not only inconsistent with the Clean Air Act, it is inconsistent with EPA’s contemporaneous treatment of other regulated substances. For example, elsewhere in the Proposed Endangerment Finding, EPA indicates that it will not include certain stratospheric ozone-depleting substances (*e.g.*, CFCs, HCFCs, and Halons) in the overall endangerment finding – even though such substances do have a demonstrated impact on climate change – because ozone-depleting substances are already regulated under Title VI of the Clean Air Act and the Montreal Protocol. *Id.* at 18,897. EPA’s decision to consider one pollutant that is already regulated (ozone), while at the same time exclude consideration of other regulated constituents (CFCs, HCFCs, and Halons), is arbitrary.

Because the Agency already regulates ozone under Clean Air Act sections 108 and 109, it has presumably established a level for that pollutant that is requisite to protect human health and welfare, with an adequate margin of safety. It would, therefore, be redundant and improper for

⁷ Available at <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=149923>.

⁸ Available at <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=198220#Download>.



the agency to consider climate change impacts on ozone in an endangerment analysis for GHGs. Finally, EPA appears to assume that states will not comply with their legal obligations under the Clean Air Act to develop and revise plans to attain the ozone standard when it assumes that climate change will cause nonattainment problems. In light of the legal obligations to attain the ozone standard and available mechanisms to do so (reduce VOCs and NO_x emissions), it is improper for EPA to assume that states will fail to act as legally required.

D. EPA's Definition of "Pollutant" is Overbroad

EPA's proposal to list six very different GHGs as one single "pollutant" is unfounded and not necessary to respond to the International Center for Technology Assessment ("ICTA") petition and the Supreme Court's decision in *Massachusetts v. EPA*, which purportedly form the starting point for EPA's Proposed Findings. Only four of the six gases (carbon dioxide, methane, nitrous oxide, and HFCs) identified by EPA are actually emitted from section 202 sources and were the topic of the ICTA petition and the Supreme Court's decision. *See* OMB Comments at 4 (noting that EPA characterizes its Proposal as a response to the Supreme Court's decision, even though that decision arose from a petition with respect to the four GHGs).

Moreover, the gases that EPA is proposing to list together as one pollutant are all generated by different processes and, if regulated, would require different types of controls. The four gases emitted by mobile sources can generally be limited only by using controls that are specific to each. HFCs originate from air cooling units, whereas carbon dioxide, methane, and nitrous oxide come from the combustion of fossil fuels. Applying standards to address emissions of one gas may, in fact, increase the emissions of other gases. EPA's analogy to VOCs is, therefore, misplaced.

E. EPA's Consideration of National Security is Unfounded

EPA should not consider national security issues in its Proposed Endangerment Finding; but, if it does, it must consider other relevant aspects of national security not currently identified. EPA states, "Climate change impacts in certain regions of the world may exacerbate problems that raise humanitarian, trade, and *national security issues* for the U.S. Climate change has been described as a potential threat multiplier regarding national security issues." 74 Fed. Reg. at 18,904 (emphasis added). The TSD also identifies various "*potential U.S. national security implications of climate change.*" *See, e.g.,* TSD, pp. 123-24 (emphasis added). Although it is not clear whether or how much EPA relies on national security impacts in its Proposed Findings, the impacts identified by EPA relating to national security are too speculative and attenuated for consideration in its Proposed Endangerment Finding.

EPA does not appear to have consulted directly with any federal agency having jurisdiction over national security before issuing its Endangerment Proposal. And it seems that EPA provided only one document to support its Proposed Findings that could be characterized as expressing the views of a U.S. institution with national security responsibility: a written statement of Dr. Thomas Fingar, Deputy Director of National Intelligence for Analysis and Chairman of the National Intelligence Council, before the House Permanent Select Committee on Intelligence House Select Committee on Energy Independence and Global Warming, June 15,



2008, titled “National Intelligence Assessment on the National Security Implications of Global Climate Change to 2030” (“Fingar Statement”). Doc. Id. EPA-HQ-OAR-2009-0171-0021. In his statement, Deputy Director Fingar suggests that the most significant climate-change impacts on U.S. national security would result from indirect effects on state stability in other countries, as well as from potential economic migration triggered by poverty and economic degradation. These statements are inadequate to support a finding that climate change endangers U.S. national security. The effects described involve multiple, complex causal factors involving undefined social, political, and economic events that may or may not occur. Furthermore, it would be inconsistent for EPA to rely on these statements, and their inherent assumptions about human behavior and adaptive capacity, given that EPA’s Proposal expressly states that the agency will not consider reasonable adaptive responses of U.S. citizens to climate change. Finally, it would be inappropriate for EPA to assume that the U.S. agencies in charge of overseeing national security will fail to fulfill their function or that third parties will act unlawfully – under either domestic, foreign, or international law – in order to justify an endangerment finding.

If, despite the foregoing discussion, EPA insists on relying on potential national security impacts to justify its Proposed Findings, then it must expand its consideration to the full range of national security impacts that could flow from climate change, including impacts from mitigation or GHG emission reduction measures and policies. Such policies may contribute to or exacerbate international conflicts by, for example, raising food prices (one consequence of biofuel mandates already witnessed); causing relocation of manufacturing activity to unstable countries; sparking trade wars as a result of taxes or tariffs intended to discriminate against energy intensive products; and increasing energy prices around the world, which will likely slow economic growth in unstable countries. In fact, Dr. Fingar’s testimony states that policies to reduce GHGs “may affect U.S. national security interest *even more* than the physical impacts of climate change itself.” Fingar Statement at 7 (emphasis added). EPA’s Proposal does not currently weigh all of the potential impacts of climate change and foreseeable climate change responses.

F. EPA Must Consider Human Behavior in Its Endangerment Analysis

The United States has significant adaptive capacity – at both the individual and institutional levels – which is reasonably predictable and possible to account for in at least some cases. The CCSP has stated, “The United States is certainly capable of adapting to the collective impacts of climate change.”⁹ The IPCC has also noted that human health impacts from climate change will be strongly modulated by changes in health care, infrastructure, technology, and accessibility to health care. TSD, p. 73 (citation omitted). For example, the U.S. has reduced risks associated with living on coasts by enforcing stricter building codes. Risks have been further reduced through advances in weather forecasting and warning systems, as well as improved community response and planning programs. There is no reason to believe that these

⁹ CCSP, *Analyses of the effects of global change on human health and welfare and human systems*. A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research. U.S. Environmental Protection Agency.



trends will not continue. As the OMB pointed out in comments on the Proposed Endangerment Finding, “[T]he impact of climate-sensitive diseases may be minimal in a rich country like the U.S.” OMB Comments at 1; *see also* OMB Comments at 3 (“To the extent that climate change alters our environment, it will create incentives for innovation and adaptation that mitigate the damages from climate change. The document should note this possibility and how it affects the likely impacts of climate change.”). Yet the Administrator states that “it is inappropriate, in considering whether greenhouse gases endanger public health or welfare, to consider potential private behavior aimed at alleviating some of the effects of climate change.” 74 Fed. Reg. at 18,894. EPA is simply wrong on this point.

EPA’s blanket refusal to ignore human behavior, including human adaptation, in its analysis of the overall public health and welfare impacts expected from climate change in the United States is also contrary to EPA’s own approach in the Proposal. Much of the evidence on which EPA relies for its Proposed Endangerment Finding is contingent upon assumptions about human behavior and society (*e.g.*, residential and building patterns along coasts or rivers, low adaptive capacity among vulnerable people and communities), including the Administrator’s statements that climate change will have national security implications for the United States. Likewise, the TSD states that abrupt climate changes are an important consideration because “if triggered, they could occur so quickly and unexpectedly that human or natural systems would have difficulty *adapting* to them.” TSD, p. 63 (citation omitted) (emphasis added). Thus, EPA should consider reasonably foreseeable private human behavior – including behavior that may mitigate impacts identified by EPA – in its Proposal. *See* OMB Comments at 3 (“[I]t seems reasonable to assume that in the absence of regulation of GHGs, new medicines that lessen health impacts of ozone will be developed.”).

It would be particularly inappropriate for EPA to fail to consider reasonably predictable adaptation by the United States and its citizens in its Proposed Findings, given U.S. and international commitments to adaptation measures and the availability of information relevant to planning for the future. Article 4.1 of the UN Framework Convention on Climate Change (“UNFCCC”) commits countries, including the United States, to prepare for and facilitate adequate adaptation to climate change. The IPCC has included an analysis of adaptation – including information on opportunities and lessons learned – in its Assessments, and EPA was the lead agency for CCSP synthesis and assessment products (“SAPs”) addressing adaptation. Moreover, other agencies routinely consider adaptive behavior in their regulatory decision-making. For example, NOAA recently considered the past and likely future responsive behavior of ribbon seals in deciding whether to list the seal species as threatened or endangered under the Endangered Species Act due to loss of ice. The agency observed that ribbon seals tend to adjust their behavior depending on the amount of ice and, therefore, determined that it could not reasonably anticipate that seals were threatened or endangered. 73 Fed. Reg. 79,822, 79,825 (Dec. 30, 2008) (“In years of low ice it is likely that ribbon seals *will adjust*, at least in part, by shifting their breeding locations in response to the position of the ice edge, as they have likely done in the past in response to interannual variability.”) (emphasis added). EPA should, therefore, consider relevant and likely human adaptation in its Proposed Endangerment Finding.

G. EPA Must Consider Impacts of the Global Recession on Its Models



EPA must consider the existing global recession in its analysis and discuss how current GHG emission trajectories may deviate from model assumptions and impact EPA's conclusions. EPA's Proposed Findings rely heavily on the IPCC's conclusions from its Fourth Assessment (2007), but the TSD acknowledges (p. 47) that even IPCC's most recent projections are based on GHG emission scenarios from the IPCC *Special Report on Emission Scenarios* (IPCC, 2000). The propriety of using these older emissions scenarios should be reconsidered and potentially revised in light of the global economic recession. Otherwise, EPA's conclusions are not based on real-world circumstances.

IV. Comments on EPA's Policy Considerations

A. Ramifications of an Overbroad Endangerment Finding

A finding by the Agency that *current* concentrations of GHGs are endangering human health and welfare, as EPA proposes, could expose major sectors of the economy to significant corporate liability for producing products that purportedly endanger health and welfare. Tort litigation involving companies that supply products that contain GHGs or that directly release GHGs from manufacturing and other processes is currently in its infancy. Today, no court has found a company liable for simply supplying or emitting GHGs. A regulatory finding as broad as that currently proposed by EPA could, however, encourage current and potential future litigation. For this reason, EPA should strongly reconsider its proposal to find that current concentrations are causing an endangerment. As discussed above, this would be more consistent with U.S. policy, given that – under even the most aggressive current legislative proposals – Congress would allow current concentrations to rise in the near future.

B. EPA Should Consider the Regulatory Implications of Its Proposal, Particularly Given that Aspects of the Proposal Are Not Necessary to Respond to *Massachusetts v. EPA*

NPRA submitted comments on November 25, 2008 in response to EPA's Advance Notice, which discussed at length the direct and indirect ramifications of an endangerment finding. These considerations remain relevant to EPA's Proposed Findings, and EPA should take them into account. NPRA's November 25, 2008 comments are therefore provided in **Attachment B**.

In particular, EPA should examine carefully NPRA's comments with respect to the propriety of a human health or a human welfare endangerment finding and the effect that one or both of such findings would have on the development of National Ambient Air Quality Standards ("NAAQS") and designation of areas as attainment and nonattainment. EPA should also examine NPRA's comments regarding the serious implications that EPA's actions on GHGs, including regulation under section 202, would have on the regulation of stationary sources under the Clean Air Act's New Source Review ("NSR") program.

C. Impacts of EPA's Decisions on the American Economy



As NPRA described in its comments on the Advance Notice, provided in **Attachment B**, an endangerment finding with respect to GHGs and subsequent regulations would have significant adverse impacts on American jobs, consumers, and economic recovery – particularly if the United States moves forward with regulation prior to securing corresponding commitments by developing countries to reduce their emissions. For these reasons, EPA should consider revising its Proposed Findings to take into account the issues raised in the comments discussed above – including those regarding EPA’s proposed overbroad definitions of “pollutant” and “pollution” and the propriety of EPA’s proposed endangerment finding with respect to human health – so that they do not have dramatic and unintended negative consequences. Indeed, negative economic impacts associated with an unnecessarily broad endangerment finding and the unilateral imposition of aggressive GHG controls are the kinds of welfare effects that EPA should consider in its overall endangerment finding to begin with. *See Sunstein, supra*, at 134 (“[A]gency decisions that increase aggregate risk levels should be found arbitrary and capricious under the Administrative Procedure Act.”).

V. Conclusion

For the reasons discussed above, NPRA does not believe that EPA has satisfied its legal obligations before making an Endangerment Finding or a Cause or Contribute Finding under section 202 of the Clean Air Act. EPA’s conclusions are not supported by the information presented in its Proposal, and EPA has failed to consider all the issues relevant to its Proposed Findings. Not only is EPA’s Proposal as currently structured legally deficient, but it also constitutes unsound policy. It fails to carefully and objectively assess a complex body of information and set forth, in a transparent manner, the Administrator’s method for assessing and weighing that information. EPA also ignores important factors that it can and should consider in its Proposal, including the adverse real-world implications that may reasonably flow from the Administrator’s unnecessarily overbroad conclusions. Given the significance of the issues raised by EPA’s Proposal – to industry, American consumers and workers, and the national economy – NPRA urges EPA to reconsider its proposed Endangerment and Cause or Contribute Findings, particularly with respect to the scientific, legal, and policy issues raised in the these comments.

A handwritten signature in black ink, appearing to read "C. Drevna", is written over a light blue rectangular background.

Charles T. Drevna
President, NPRA



ATTACHMENT A
(Studies that EPA Must Consider)



NPRA

Studies that EPA Has Failed to, But Must, Consider in Its Proposal

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ATTACHMENT B

**(NPRA's 11/25/08 Comments on EPA's Advance
Notice of Proposed Rulemaking for Regulating Greenhouse Gases)**