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Public Comments of the Competitive Enterprise Institute
On Proposed Endangerment and Cause or Contribute Findings for
Greenhouse Gases Under Section 202(a) of the Clean Air Act

To: Environmental Protection Agency
EPA Docket Center (EPA/DC), Mailcode 6102T
Attn. Docket ID No. EPA-HQ-OAR-2009-0171
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To Whom It May Concern:

The Competitive Enterprise Institute (CEI), a non-profit, free-market public policy group specializing in regulatory issues, submits these comments for consideration regarding and in response to EPA's Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act ("Finding").

Overview

In addition to reiterating its assessment from comments made on EPA's related 2008 ANPR, and other factors detailed below, CEI's Comments expressing the position that EPA improperly reached the immediate "Cause or Contribute" Finding ("Finding") distill to two major themes:

First, despite serial references apparently designed to satisfy the statutory requirement conditioning EPA's exercise of authority on its formation of a "judgment," 42 U. S. C. §7521(a)(1) – references to, e.g., the Administrator "exercising her judgment based on the information available", having reviewed "the scientific findings in totality", and of her "weighing the scientific evidence" (all specific examples drawn from Finding, p. 98[1]), or "weighing the evidence collectively" (p. 70) – the Administrator's Finding also reflects and even serially admits that she did no such thing.

Although noting that "[t]he Administrator may make projections, assessments and estimates that are reasonable, as compared to a '"crystal ball" inquiry'" (Finding, p. 34), by its own admission the Administrator did even less than either of those approaches. At best, she simply outsourced a crystal ball inquiry to other, conflict-ridden and self-referencing entities, and their non-peer-reviewed and fatally flawed products. EPA freely admits this delegation of its judgment as to what evidence should be considered, how it should be viewed and what conclusions are therefore appropriate, on the grounds that these products are fair proxies for "the scientific literature". They are no such thing.

Further dooming this effort is that the chosen outside bodies demonstrably lack balance in their construct or process and do not in fact resemble EPA's description of them.

The Administrator's Finding manifests a classic example of the fallacy of an "appeal to authority" – claiming something to be true based on the expertise of an authority rather than objective facts – which we argue is a) impermissible and b) even were it permissible, EPA's choice of sources to which it defers is plainly arbitrary and capricious on its face as well as due to the process, nature and content of the sources and products deferred to.

EPA also mischaracterizes these bodies to which it deferred discretion on these issues. Their referenced compendiums are not fair proxies for "the scientific community", and they clearly do not represent the "best available" or "rigorously and transparently peer-reviewed" science as claimed. EPA serially makes clear it deferred to these products at the expense of conducting reasonable inquiry or, as it claims it must, "mak[ing] a comparative assessment of risks and projections of future possibilities." (Finding, p. 33)

In truth and as discussed, *infra*, these bodies' outputs satisfy neither the restrictions of the Information Quality Act,[2] nor the *Daubert* opinion's test for "sound science" in federal court. Yet they are the basis of EPA's Finding. This is impermissible.

Notwithstanding EPA's touting of its own effort, the fact is that for more than the past year research has been published scrambling to acknowledge and explain away the lack of observed atmospheric warming over more than the past decade, and even recent cooling (that apparently should continue for decades[3]). So, even though it makes

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[1] Unless stated otherwise, all referenced page numbers are to EPA's Finding.
[2] We are mindful of EPA's disclaimer for IQA purposes when linking to, e.g., the IPCC, http://www.epa.gov/epahome/exitepa.htm.
[3] See e.g., *Nature* 453, 84-88, May 2008, "Advancing decadal-scale climate prediction in the North Atlantic sector", available at http://wattsupwiththat.files.wordpress.com/2008/05/keenlyside_nature_may_2008.pdf,

demonstrably unsupportable claims such as "The Administrator's proposed endangerment finding is based on the entire range of observed risks and potential harms to public health and welfare" (p. 70), EPA ignores more recent projections, made in response to *observed cooling ignored in EPA's Finding and which is not allowed for in any of the GCMs* on which EPA effectively relies.

These represent not just competing, but updated projections. By ignoring these and observed phenomena, EPA arbitrarily rejects them out of hand in a fashion that is improper, though the reason for which is surely self-evident. EPA's silence on this material, despite its own claims of having conducted "a comparative assessment of…projections of future possibilities," is illustrative of the unsupportable nature of EPA's Finding.

Second, the very nature of those documents to which EPA defers for its judgment reveal that EPA effectively and impermissibly relies on unverifiable General Circulation Models (GCMs), over recent and historical observations of climate behavior. GCMs have been exposed in recent years as fatally flawed and not credible for projecting – let alone predicting – the climate's response to increased GHG concentrations.

As discussed, *infra*, GCM outputs are larded with "fudge" factors, unverifiable, apparently disproven and so unreliable that EPA could neither publish GCM outputs due to the restrictions of the Information Quality Act, nor introduce them for reference in a federal court due to the *Daubert* opinion's test for "sound science". Yet they are the basis of EPA's Finding. *It's the best we've* got is neither true, nor a sufficient credential.

The output of these computer model projections is, as with all such tools, a direct function of their assumptions, which include an arbitrary or even capricious, but nonetheless improbable and essentially disproven "climate sensitivity".

GCM failure and unreliability is made manifest by, *inter alia*:

1) the widely acknowledged failure of models to accurately consider major climate drivers such as solar variability, oceanic cycles and clouds;
2) recent revelations that still other drivers have far different roles in climate than the models assume (when they incorporate the influence at all), even one that is now attributed with as much as one-fifth of observed warming – with unlikely sources as the *New York Times* suddenly and approvingly citing "one of the world's

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and Tsonis and Swanson, *Journal of Geophysical Research Letters* (2009). While these authors ritually conclude their work in fairly ritual if unsupported fashion, that at some point in the future then the models will be proven right, and warming will take off, the take-away point is that more recent work has been done to explain away the cooling that none of the GCMs that EPA effectively relies upon allow for. Noting these papers therefore also responds to EPA's appeal, on page 22 of its Finding, for commenting parties to "provide[] examples of additional statutory factors that they believe would justify denying the [ICTA] petition without addressing the endangerment and cause or contribute criteria". Of course, this also informs a conclusion that EPA's endangerment and cause-or-contribute Finding is improper.

leading climate scientists" calling this forcing "what's melting the glaciers",[4] rather at odds with how EPA treats it, and

3) observations, which reveal the models' inherent and fatal flaw of being programmed for a hyper-sensitivity to increases in atmospheric CO2.

In short, the models relied upon by EPA, largely through EPA outsourcing its judgment, are "tuned" in a fashion ensuring that they produce their scenarios which the real world is disproving year over year; this is due principally to their assuming a climate far more sensitive, or responsive, to increases in CO2. That is, they are not credible bases for projecting climate, and thus are not a reasonable basis for GHG-related policy decisions.

As Dr. S. Fred Singer recently wrote:

> Based on empirical evidence, various researchers have concluded that [climate sensitivity, or CS] is much smaller than the model-derived values quoted by the IPCC. Some of the empirical studies compare observed temperature trends over time with IPCC values [Schwartz, Monckton, etc]; others [Douglass, Singer, NIPCC] compare observed and modeled ***patterns*** of temperature trends ("fingerprints")'.
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> CS is conventionally defined as the equilibrium temp rise caused by a doubled forcing of GH gases; it is often taken to be just a doubling of CO2 levels. The 'canonical' CS values of the IPCC range from 1.5 to 4.5 C, with a median of 3.0 C. Many model calculations show higher values, depending on assumptions about cloud parameters; for example, Stainforth et al [2005] quote as high as 11.5 C.
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> The empirical values for CS are all well below the IPCC's; some are 0.5 C or even less, corresponding to a trend of Global Mean Sfc Temp (GMST) of only about 0.05 C/decade and a tropical troposphere trend of about 0.1 C/decade. These trends are at or below the limit of detection, because of the interfering effects of aerosol emissions (both natural and anthropogenic), volcanic eruptions, El Niños and other, less dramatic atmosphere-ocean interactions.
>
> The 'fingerprint' method can only conclude that anthropogenic effects are not detected [NIPCC], and yields no values for CS – only an upper limit of perhaps 0.3 C, an order of magnitude smaller than the IPCC's median value.
>
> How to account for the huge discrepancy between IPCC and NIPCC? In principle, one can invoke natural forcings, both external (solar) and internal, as well as aerosols that affect the optical properties of the atmosphere.

This question of sensitivity is also highly relevant to the GCMs being impermissible bases for EPA's Finding, as described *infra*.

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[4] Elizabeth Rosenthal, "Third-World Stove Soot Is Target in Climate Fight", *New York Times*, April 15, 2009, noting recent research suggesting that soot may be responsible for 18% of global warming, compared to 40% for carbon dioxide, and with an even more marked effect on Arctic ice (40% of the loss).

We note that GCM outputs are not merely one consideration upon which EPA basis its Finding, equal among many or nearly so, but are the overwhelming foundation for the sources to which EPA claims it turned. They also therefore serve the same important role in EPA's outsourced judgment.

EPA does, if typically quite vaguely, allude to select observations in its Finding – and repeatedly claims it reached its Finding after, e.g., "considering both observed and projected future effects"[5] – but ultimately this cannot reasonably be taken as true. Regardless, on its face it appears to reflect little more than sophistry, an incurable bias in favor of computer models, or some combination of the two, for both its claim to near-certainty regarding attribution to Man, and projection of the future.[6] Observations, unlike computer model projections, are inarguably a permissible component of any such analysis. Here we demonstrate the latter are an impermissible basis for this Finding, which we conclude is unsupportable as a matter of law as well as science.

Of course, when models and observations are in such stark disagreement, it is actually an absurd claim to have relied on them both. More absurd, with regard to the most important indicator of temperature, this disagreement is – glaringly – not of magnitude *but of sign*.

Further, GHG-induced warming is the lead float in the parade of horribles that EPA claims pose the endangerment. Models show continued warming as a result of GHG emission increases, while observations show cooling, cooling oceans and other confounding realities in the face of GHG emissions increasing faster even than modeled.

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[5] Indeed, EPA uses the phrase "effects that are occurring and are very likely to occur in the future". Further, EPA opens its Finding by claiming that anthropogenic contributions of greenhouse gases "are very likely the cause of the observed increase in average temperatures and other climatic changes", then cites "effects of climate change observed to date and projected to occur in the future". Yet **EPA does not and cannot reasonably correlate such increased GHGs or Man's contribution of them to recent, observed change in a weather or climatic phenomenon** – ***all of which are always changing*** yet nearly any change in which, we note, EPA deems throughout its Finding as harmful.

EPA's inability to credibly make the claimed cause-or-contribute connection is illustrated by, *inter alia*, the lack of nearly all projected phenomena failing to match with observations, as discussed in detail during the exposition of GCM inadequacies, below. Merely saying something is so, claiming that some outside body rhetorically claimed it is so and/or pointing to a proven-wrong computer model as having projected something with the same sign (positive or negative) if markedly different, does not credibly satisfy the requirements of U.S. environmental or regulatory law for these purposes.

[6] A note about the Agency's dismissal of observations: In its rather unscientific "scientific fact sheet" ("Summary of the Science Supporting EPA's Finding That Greenhouse Gases Threaten Public Health and Welfare", available at http://epa.gov/climatechange/endangerment/downloads/ScienceFactSheet.pdf), and elsewhere, EPA does refer to certain observed facts but then makes a *non sequitor*, unscientific and unsupportable (and unsupported) leap from them to its Finding. For example, in the cited "Summary" document EPA notes an increase in atmospheric GHG concentrations, human responsibility for much of the increase, and temperature increase in recent years (if mis-portrayed). Although together this self-styled summary of the science supporting EPA's Finding in fact demonstrate nothing, let alone support any such Finding, the implication is that A causes B. This is offered in furtherance of an unsupportable "at this rate" conclusion, which is of course the ultimate justification and stated basis for EPA's Finding, manifested in GCM outputs.

An accurate assessment of observations would be more detailed and note the absence of the alleged impact of increased GHGs, and therefore the lack of the GCMs' assumed sensitivity to such increase. This is discussed in more detail in these comments.

How EPA can then cite other supposed *results of* warming in the face of cooling as supporting its Finding is arbitrary and capricious.

That is, EPA claiming that it relied on observations *other than temperature* for its Finding does not withstand scrutiny. By EPA's own claims, these other considerations purportedly flowing from continued warming are relevant as the supposed result of warming, which is missing from observations if *increasing* in models. Any one or more of these occurring at some level is therefore at best coincidence – not affirmation of the alleged ongoing endangerment of GHG-induced warming – but also further undercuts the models' claim to reliability. Further, some of the claims such as a purportedly accelerating rate of sea level rise are simply fabrications, as described, *infra*.

Should EPA then claim that it isn't really recent trends it speaks of but instead long-term trends, this too places their conclusion in a poor light given that the long-term trends in EPA's selected areas (e.g., heat waves, drought, downpours, et al) do not reflect a reasonably credible cause (or contribute) relationship with GHG concentrations.

Further, EPA choosing to examine "observations" other than in terms of recent years or decades does flirt with arbitrary (or worse) baseline cherry-picking. Though EPA likes to invoke a 1750 baseline on occasion, this is recognized as approximately the end of the Little Ice Age, with, e.g., Thomas Jefferson writing of global warming in his Notes on the State of Virginia, 1781. 1750 is therefore at best arbitrary, such that EPA must at minimum work into its analysis this recognized climatic shift, not attributed to Man be any but the most extreme activists. EPA does not do so, and is therefore arbitrary.

Similarly, EPA invokes data beginning in 1978 and trends afterward as meaningful without noting that this data begins at the end of a three-decades-plus cooling, at the end of the coldest decade in the century. Context kills, in such examples of arbitrariness.

Critically, EPA recognizes the impropriety of relying on unreliable future projections elsewhere in its Finding. For example, EPA does so in eschewing future projected emissions in its analysis, "because they are uncertain and current emissions data are a valid proxy for near-term emissions" (p. 112). Similarly, GCM output is wholly unreliable, and contradictory observations like "current emissions data" are a far better proxy for the climate system's sensitivity to CO2/GHG concentrations. EPA's differing standards are arbitrary and capricious.

Yet the same logic EPA applies in rejecting such speculation reveals why EPA should have rejected the GCMs' speculation, made its own determination of "the scientific findings in totality", and based its decision upon or at minimum seriously factored observed climate sensitivity, observed climate impacts, other experiential evidence and, e.g., skeptical positions such as those articulated by numerous solar physicists or, e.g., the Polish Academy of Sciences.[7]

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[7] Available in English at http://www.heartland.org/custom/semod_policybot/pdf/25390.pdf; the original document (in Polish) is available at http://www.kngeol.pan.pl/images/stories/pliki/2.Stanowisko%20KNG%20w%20sprawie%20zmian%20klimatu.pdf.

As EPA notes in justifying its refusal to consider modeled emissions scenarios in the cause or contribute to analysis, "This approach is consistent with how contribution has been assessed in previous actions under the Clean Air Act." (p. 112) The Agency should have been consistent when it came to the ultimate assessment underlying its decision.

Indeed, as detailed *infra* CEI posits that the output of GCMs are so unreliable that they would not be admissible as evidence or for reference in the federal courts, which while possibly not determinative of the Agency's ability to use their outputs (that is, there is no precedent as of yet making that point), this is one more instructive factor informing a decision that such reliance is not only unfounded but impermissible.

Regardless, the totality of the understanding of climate, and of GCM ability to credibly project climate, make it inescapable that GCMs can not credibly project climate as EPA employs them; if EPA cannot credibly project climate with GCMs, it cannot credibly premise climate (or other) policy on GCM output.

All of this informs an opinion that EPA is in violation of its charge from *Massachusetts v. EPA* which allows the Agency to make the instant "cause or contribute" Finding if its judgment is reasoned and not subject to "profound scientific uncertainty." The observations, true state of knowledge and scientific literature that EPA chose to ignore, and it seems avoid even exposing itself to, manifestly represents such uncertainty and, as such, we are hard-pressed to imagine how EPA could have more transparently evaded its responsibility in this case.

I. EPA's Finding is Arbitrary and Capricious by Virtue of its Undue and Unsupportable Attribution of Climate Influence to Anthropogenic GHGs

For the following reasons, as well as all other detailed, *infra*, EPA's Finding is unsupportable and unfounded.

We repeat the lack of justification for or wisdom in EPA making an "Endangerment" finding that we articulated in our comments on EPA's GHG ANPR.[8] The majority in *Massachusetts v. EPA* quite clearly did not so find or to instruct EPA to regulate greenhouse gases (GHGs) but instead asserted, as EPA correctly noted, "that the Clean Air Act authorizes EPA to regulate tailpipe greenhouse gas emissions if EPA determines they cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare". The Court plainly ruled that, given an expansive reading of the CAA definition of pollutant, "On remand, EPA must ground its reasons for action or inaction in the statute."[9]

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[8] http://www.regulations.gov/fdmspublic/component/main?main=DocumentDetail&o=09000064807c9cb1

[9] The Court concluded in pertinent part, "While the statute conditions EPA action on its formation of a 'judgment,' that judgment must relate to whether an air pollutant 'cause[s], or contribute[s] to, air pollution which may reasonably be anticipated to endanger public health or welfare." §7601(a)(1). Under the Act's clear terms, EPA can avoid promulgating regulations only if it determines that greenhouse gases do not contribute to climate change or if it provides some reasonable explanation as to why it cannot or will not exercise its discretion to determine whether they do… If the scientific uncertainty is so profound that it precludes EPA from making a reasoned judgment, it must say so. The statutory question is whether

We repeat our emphasis that even the most enthusiastic supporters of seizing this ruling to regulate CO2 expressly or implicitly acknowledge that the Act's *design* is unsuited for regulating such a ubiquitous, diffuse and non-hazardous emission. EPA's reasonable course, as discussed *infra*, is therefore to ground in the statute a determination that it cannot identify any endangerment to public health or welfare directly resulting from or contributed to by carbon dioxide from U.S. automobiles – either *in toto* or in any amount that EPA might possibly regulate. That is, EPA has not reasonably made a CAA endangerment finding.

EPA has done so while failing to consider that which clearly has driven the cooling to date, which is now projected to continue for decades regardless of any anthropogenic actions: cyclical solar and oceanic activity. CO2 is a marginal GHG, and indeed all man-made GHGs are marginal contributors to climate that is not outside historic, natural variability. EPA must, but fails to, make the case otherwise.

Eliding this fatal flaw in EPA's theory, the Agency, as discussed *infra*, ignores recent observations – showing the first decades of projection of computer modeling, itself only about 20 years in existence, to be an utter failure – and focuses instead on CO2 as a proxy for temperatures and/or climate and/or climate change. They are not. EPA notes elevated GHG levels as somehow meaningful, but effectively in a vacuum, and they are not. EPA ignoring that climate's behavior is not outside of natural variability, and relying on models that backfill with feedbacks in an attempt to explain this away, does not change that temperatures have not cooperated, nor have other indicators, and climate is not as sensitive to GHGs as is the premise of EPA's Finding.

In support of this position we note that general circulation models (GCMs) relied upon by EPA also appear to conclude that carbon dioxide emissions from U.S. automobiles or section 202(a) sources, collectively, do not cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare including climate.[10] Again, the Court did not find to the contrary, but left this finding to EPA.

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sufficient information exists for it to make an endangerment finding. Instead, EPA rejected the rule-making petition based on impermissible considerations. Its action was therefore "arbitrary, capricious, or otherwise not in accordance with law," §7607(d)(9). On remand, EPA must ground its reasons for action or inaction in the statute." *Massachusetts v. EPA* (No. 05-1120) 415 F. 3d 50 (U.S. 2007), Stevens, Maj., p. 5, http://www.supremecourtus.gov/opinions/06pdf/05-1120.pdf.

[10] We refer to the October 8, 2008 letter from Robert J. Myers, Principal Deputy Assistant Administrator, Office of Air and Radiation to Dale Hall (FWS) and James Leaky (NMFS). For these purposes we estimate *total* U.S. automobile CO2 emissions at approximately 1,304,429,532 metric tons per year. Extrapolating from EPA's use of "the well established Model for the Assessment of Greenhouse-gas Induced Climate Change (MAGICC)", CO2 emissions from U.S. automobiles *in toto* therefore have no detectable climatic impact. Instead, the warming attributable to the entire U.S. automobile contribution of CO2 falls well within that which is indiscernible from background noise, at between 0.02-0.03 degrees Celsius. Viewed alternately and even assuming that EPA would seek to mandate zero carbon dioxide emissions by new vehicles, rough calculations using the assumptions and factors set forth by EPA regarding MAGICC reveal that EPA could not detectably regulate a reduction in potential anthropogenic GHG forcing.

A massive and to date technologically inconceivable 50% reduction on CO2 emissions from new auto tailpipes would yield an even more miniscule impact. Again, this is using calculations, assumptions and factors relevant to MAGICC as described by EPA.

As such, no feasible regulation of CO2 from automobile tailpipes – indeed, even any *hypothetical* regulation from U.S. automobile tailpipes or section 202(a) sources – could under any scenario have a detectable impact on the climate. Therefore, it is also true that no resulting regulation could alleviate any "endangerment" potentially arising in whole or in part from U.S. CO2 emissions.

EPA does claim that "collective [GHG] emissions from section 202(a) source categories are significant" (p. 116), but upon scrutiny, throughout the Finding EPA claims that this is when taken collectively *and*, more critically, *compared against only the total of* Man-made *emissions*. Yet Man-made emissions are a very small fraction of total GHG production, or emissions. EPA's assessment does not assess the "significance" of section 202(a) emission sources, but is thoroughly arbitrary, grounding its claim in some unstated logic, assessment or authority.

Claiming that relevant emissions are "significant" compared only to Man-made emissions is in fact a patently false and inherently meaningless test. That EPA invokes such an artifice is illustrative of the actual impact or significance of section 202(a) emissions, and the lack of climatic impact that any regulation would have.

Perversely, EPA strives to make this relevant with the qualifier that "The Administrator believes that consideration of the global context is important for the cause or contribute test". We agree with this, but note that the Agency clearly did not, in fact, consider such context in any reasonable form. Instead, it manufactures a truncated vision of that "global context" exaggerating the significance of emissions from section 202(a) source categories.

We also note that in acknowledging that the Administrator "is not to look at the risks attributable to a single source or class of sources" (p. 27), EPA agrees that it must view anthropogenic GHGs as what they are: a percentage of a percentage (all GHGs[11]) of a percentage (sun, clouds, oceans, et al.) of climate influences. It is clear that, in accepting GCM outputs relying on a proven-wrong hyper-sensitive climate, EPA is not following this guidance, but instead accepting modelers' elevation of GHGs in the hierarchy, an Anthropocentrism sadly recalling the Geocentrists of old.

While noting various anthropogenic contributions, EPA joins the IPCC (for obvious reasons) in dismissing these other, obvious drivers whose behavior much more closely associates with climatic phenomena, by saying that Man's influence is "better understood" than other influences (p. 52).

This, too, is risible given that the IPCC's claimed "low level of scientific understanding" of forcings like the sun inherently makes its claim to understanding Man's contribution facially absurd. Yet it is only such fantasy that can prompt the Agency to state that

[11] We note the Agency states "Finally, the phrase 'cause or contribute' ensures that all sources of the contaminant which contribute to air pollution are considered in the endangerment analysis". (Finding p. 35) This, as well as any reasonableness standard, ensures the Administrator must consider all GHGs, of which Man only contributes a fraction. EPA failed to consider total global budgets, Man-made or otherwise.

"carbon dioxide is projected to remain the dominant driver of climate change for the remainder of this century" (p. 53)(this follows "[t]he Administrator acknowledg[ing] that there are other anthropogenic climate forcers which play a role in climate change (discussed below)" (p. 51), while failing to equally dignify the obviously vastly more dominant "natural" forcings. Both reflect how the Administrator simply follows the disproved assumption of GCMs that human activity drives climate; the Administrator fails to acknowledge the overwhelming influence of "natural" forcings, as proven by the increase in anthropogenic GHG emissions as temperatures cooled, completely confounding the theory EPA embraces and clings to in the face of contrary evidence).

In fact, no paper cited by EPA or by the outside authorities to which EPA appeals in its outsourcing of this role shows – as opposed to *assumes* – that CO2 (or GHGs) to have ever driven climate. Instead, their conclusions are premised upon GCM outputs, which are the result of their assumptions, which assumptions are now inarguably proven to be wrong, principal among them that the climate is so highly sensitive to a doubling of CO2.

The absurdity of this "dominant" claim is placed in relief when recalling the admission that models reflect little in the way of input from such obvious, more dominant drivers as the sun and oceanic activity. This prompts us to reaffirm, as detailed herein, how relying on GCMs and demonstrably ignoring or at best unreasonably considering for this Finding observations – as well as the much stronger relationships between weather and climatic phenomena cited by the Agency, such as the sun, clouds and oceans, also ignoring that Man's GHGs are a percentage of a percentage of a percentage of climate forcings – does not consider "the totality of the circumstances" (p. 39), is not "[b]ased on the total weight of evidence" (p. 69), and is not reasonable.

EPA stops itself short of clarity on this, when it touts how "long-lived greenhouse gases (carbon dioxide and methane) are well above the natural range of atmospheric concentrations compared to the last 650,000 years" (p. 56). Although it takes the next step to note that human activity has a major role *in the concentration increase*, the dog that does not bark is the Agency making and supporting a conclusion that these human-induced concentration increases are leading to increased temperatures, then the other, allegedly temperature-induced threats cited as the endangerment.

Therefore, EPA's claim – on top of its admittedly false assurance of having weighed the totality of the evidence – to have concluded an "ability to attribute these changes to the observed anthropogenic buildup of greenhouse gases in the atmosphere to date" (p. 70) merely represents recitation of IPCC claims that is without foundation. As such, EPA's Finding rests on a false premise.

Addressing this instead of merely parroting an unsupportable IPCC claim would require that EPA take notice that temperatures are not following suit but are responding the opposite of what the GCMs on which EPA relies says they should be responding to emissions even faster than the models assumed. EPA clearly has blinkered its view to exclude inconvenient facts.

Instead, EPA cherry-picks its comparisons of points in time. As noted EPA cites 1750 and today, noting that there has been climate change – and warming that is "unequivocal" – and there have been concentration increases which Man contributed to, ergo C caused or contributed to B which caused A. But, on their own, these statements inform no conclusion, which does not stop the Agency from improperly dismissing any reasonable consideration of natural climate variability.

That is, that if Man no longer inhabited the planet, climate change would still have occurred. Given that from 1750 to today we have moved from the Little Ice Age, with no claim that Man caused this climatic shift, it is clear that that change would have been similar or the same. EPA merely borrows simple syllogistic (il)logic from the IPCC, impermissibly avoiding exercising its own judgment, and this Finding is therefore improper.

EPA does then state that "the scientific literature" compels a conclusion that these concentrations are "the root cause of recently observed climate change" (pp. 57-58). Yet here EPA improperly conflates the IPCC and CCSP with "the scientific literature", and is simply stating it is so because they say it is so, with some reference to GCM-produced outputs supporting that claim.

EPA continues to reflect this unsupportable premise that but-for Man climate would not have changed, that all change is Man-induced (and, if cooling, to be ignored). For example, EPA exposes itself to the charge that it is relying not only on GCMs for its conclusion, but the rather breathtakingly non-scientific *if it wasn't Man I can't explain it*[12] crutch employed by modelers and others stumped that their admittedly incomplete formulae might not fully capture the highly complex climate system, and/or climate might be driven by forces other than that which they are simply certain has assumed climate dominance.

To claim that without man "the warming *cannot* be explained by natural variability" (p. 60, emphasis added) is a misstatement unsupportable under even a moment's scrutiny. First, it is not being "explained" by using proven-wrong models that effectively ignore the sun and other influences in favor of a presumption of a climate highly sensitive to CO2 doubling. Second, EPA then regularly and also non-scientifically equates GHG concentrations with climate change and, since the former is clearly being driven upward by Man and is, to EPA, a proxy for the latter, then the latter must be driven by Man, even in the face of uncooperative observations.

These are rhetorical games, but not "science" worthy of relevant and applicable U.S. law.

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[12] For example, "Global observed temperatures over the last century can be reproduced only when models simulations include both natural and anthropogenic forcings" (p. 59); what EPA and the modelers refuse to accept is that this is no more than an acknowledgement that their tuning models to be hyper-sensitive to CO2, "low level of scientific understanding" of the sun, clouds, oceans and other influences, leaves the models not fit for purpose.

Also, we note how EPA implicitly acknowledges its inability to credibly attribute the impacts with its refuge in meaningless phrases such as "changes that are consistent with the direction of change expected from warming and human-induced change." (p. 72). When a phrase can mean everything, it means nothing, and EPA here – like climate modelers generally, when faced with confounding observations such as cooling, a cooling Antarctic, cooling oceans, and a failure of other projections/predictions to come true – employs this specific phrase seeking to capture all observations as supporting its Finding.

GHG concentrations and "climate" or "climate change" (anthropogenic or otherwise) are not the same, and revealing that one's understanding is so rudimentary that *we can't explain climate change without blaming Man* reveals an arbitrariness and capriciousness. The effect of EPA's Finding is to equate section 202(a) source emissions with GHGs, with climate change, with Man-made climate change. Though necessary for EPA to reach its Finding, this is several stretches too many to be credible.

We suggest that EPA take notice before proceeding any further down this path of "if it's not a dog it must be a cat", which is insufficient for these purposes.

Also, we see here and elsewhere that, although the Agency serially acknowledges it is to take uncertainty into account, uncertainty is simply glossed over, instead.

As such, we see the Administrator violates her own claimed standard of judgment, of "weigh[ing] risks and [considering] projections of future possibilities, while also recognizing uncertainties and extrapolating from existing data." (p. 29) First, it is apparent that the only uncertainties that EPA is willing to recognize are a) those of other *possible anthropogenic influences* (see, e.g., Finding pp. 64-69), as opposed to the admitted (by the IPCC) gaping holes in the models' grasp of the solar, cloud and oceanic influences, and b) just *how severe* will be that which EPA is just certain that Man will cause. This remarkably blinkered approach is *prima facie* arbitrary and capricious.

Also, despite EPA's remarkable effort to obviate any reasonableness standard by implying that whatever the Administrator decides is thereby reasonable,[13] this does not mean *any* projections, but *reasonable* projections. Those that have been discredited for, e.g., being disproved already by observations and highly overestimating the climate's sensitivity are not made "reasonable" by being "all we've got".

In this case, the reasonable Administrator would look to past climatic response to CO2 or GHGs, which do not appear to generally be climate drivers, only influences, as well as to recent climatic response to rapidly increasing GHG emissions. Those observations demand a different conclusion than that which EPA reaches in its Finding.

Further illustrating this is that nothing EPA could order up would change that which it claims endangers public health and welfare.

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[13] "Notably, the phrase 'in [her] judgment' modifies both 'may reasonably be anticipated' and 'cause or contribute'" (p. 29).

II. EPA improperly assumes an unsupportable relationship between emission reductions and "benefits"

EPA apparently justifies its finding with an extended reading of *Ethyl Corp's* "cause or contribute standard" under which EPA need not know the benefits of reducing some emission. This is not, however, the same as justifying an "every little bit helps" approach, particularly when there is no credible claim in the literature that this is the case. There is no support for the notion, upon which EPA in part premises its Finding, that some reduction in U.S. or even global emissions would produce some concomitant, identifiable or simply related reduction in the phenomena EPA cites as "very likely" to occur as a result of U.S. or global GHG emissions.

Justices Alito and Scalia and Chief Justice Roberts all raised at one level or another this issue in oral argument in *Massachusetts v. EPA* but did not receive an answer.[14] EPA is proceeding as if there is an affirmative answer to the question, posed by Justice Scalia as whether there is a "straight line ratio" between U.S. or global emissions or concentrations and these phenomena, or even any direct relationship, be it proportional, truncated, logarithmic, exponential or otherwise.

EPA only brushes up against this critical issue, stating (if offering no elaboration on) "There is disagreement about whether and when increases in adverse effects will be linear or non-linear; on some projections, nonlinear increases in such effects can reasonably be expected at some future point." (p. 81) We note that this continues EPA's practice of recognizing disagreement only in the extent or magnitude of the alleged ("certain") horrors that Man will wreak upon the planet (in GCM outputs, which are directly dependent upon the selected inputs).

The assumption on which EPA premises its Finding in part, even accepting all of its assumptions (disproved though they may be for various other reasons, as detailed herein), is instead that a massive global reduction in emissions is required to detectably impact the cited phenomena, the change in which EPA cites as posing an endangerment. EPA cannot hope to achieve this. Therefore, EPA's Finding, premised also on the assumption that some intervention by EPA can materially alter these changes, is unsupportable.

EPA should instead proceed with the axiom firmly in mind that nothing EPA could feasibly, or even in a world where it possessed plenary authority, impose on the U.S. economy would, under any scenario, detectably impact the climate, beneficially or otherwise. This is clear from the scientific literature that EPA alternately claims to have scrutinized and left to the judgment of politicized, outside bodies. It is also implicit in EPA turning to the prospect of others becoming inspired by and joining EPA's effort, discussed *infra*.

To proceed pretending otherwise is *prima facie* arbitrary and capricious.

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[14] *Massachusetts v. EPA* transcript, pp. 10-13, http://www.supremecourtus.gov/oral_arguments/argument_transcripts/05-1120.pdf.

EPA's improper assumption that *if X is bad, then any diminution of X is good* does seem to reflect an interpretation of *Ethyl Corp's* "considerable discretion" and "precautionary" authority granted the Agency as freeing it to regulate with full knowledge that its regulations cannot conceivably have a detectable, let alone material, impact on that which is purportedly being addressed. That is, that regulation for regulation's sake is sufficient so long as EPA claims it is in the name of a potential, and potentially catastrophic, harm.

EPA states that "the more serious the [NB: in this case, modeled or simply hypothesized] endangerment to public health and welfare, the more important it may be that action taken to address the actual or potential harm even if no one action alone can solve the problem, and a series of actions is called for." (p. 41)

EPA elsewhere details a sliding scale of likelihood and seriousness of the threat (e.g., "If the harm would be catastrophic, the Administrator is permitted to find endangerment even if the likelihood is small." Finding page 26). EPA's defense against this argument, that "it is not necessary to rely on low-probability outcomes in order to find endangerment here" (p. 26) ignores that EPA is quite clearly acting on the basis of the claimed possibility of catastrophic impacts (as per unreliable GCMs).

This does seem to abandon the other prong of the *Ethyl Corp*. sliding scale, *likelihood*, rushing into the comforting notion that "it's the seriousness of the charge" that matters, instead. Here, as is typically the case, the catastrophist outcomes are not only the least likely, but almost certainly proven by observations to be the musings of an inapposite mathematical model with little relevance to the real world.

This is not, as EPA seems to read it, a license to dismiss that nothing it could do would "solve" the matter at hand; EPA seems to recognize, when reading between the lines of its Finding, the highly questionable notion that it could even *impact* the climate were it to, as it seems to believe it has authority to, regulate all (potentially covered) U.S. GHG emissions away. That EPA then invokes fealty "to Congress' direction that the Administrator consider the whole picture when exercising her judgment" (p. 42) only reaffirms that EPA did not bother with its own assessment of the science and projections.

In addition to essentially claiming its ability to regulate is triggered simply by an allegation of potential catastrophe, EPA's Finding also reflects a belief that it is under no burden to determine whether the U.S. contribution to a purported global threat *materially* or detectably contributes to an endangerment. That allows EPA free rein to pursue the following dangerous syllogism that, if X contributes to Y, and Man contributes to X, therefore Man contributes to Y. We repeat by reference our discussion of "significance", *supra*.

Materiality or significance therefore does not appear to have been a serious consideration, and/or EPA has otherwise failed to make the substantive case that Man materially impacts the alleged threats or always-changing climatic or weather phenomena.

This also condemns the U.S. to shoulder any relevant *global* responsibility in the event EPA's Finding is the basis for unilaterally seeking to impact climate by regulation, even if, once again, if all covered source emissions ceased it would not materially alter that to which EPA says they "cause or contribute".[15] Viewed alternately, EPA is unlikely to detectably impact those threats even if it successfully banned anthropogenic GHGs by the U.S. – which EPA indicates is within its authority, and is the inescapable objective were EPA to even hope to "remedy" the alleged threats; in fact, any other level set by EPA is clearly arbitrary.

Axiomatically, if removing the U.S. contribution would not detectably abate the alleged threats – because there is no argument made of a straight-line or similar relationship between emissions and climate change, as observations prove – then EPA cannot credibly or reasonably claim that U.S. emissions pose an endangerment.

Similarly, EPA makes plain, *inter alia* on page 25 of its Finding, that it is proceeding on the basis of "making reasonable projections of future trends and *possibilities*" (emphasis added). As we detail, EPA's outsourced projections of future trends are unreasonable, as they are simply without credibility and defenses of them are reduced to *they're all we've got*.

This also is facially capricious by necessarily allowing the Administrator to find that *any* such claimed *end-of-days* threat poses an endangerment, given that, while the possibility is small – like the catastrophic modeled scenarios relied upon by the sources to which EPA outsources its judgment in the instant matter – the claim is after all catastrophic and therefore must pose an endangerment. EPA itself notes that, even if this does not require "significant" contribution, it does require a "sufficient contribution", in the Administrator's judgment (p. 37), which means non-trivial, but again that judgment must be reasonable as EPA also admits (p. 37).

We repeat by reference here our discussion of EPA's claim of "significance", *supra*.

Such an absurd conclusion as this blank-check interpretation cannot possibly be what the Court intended when it noted, as EPA emphasizes, "that the statute did not require a factual finding" of endangerment (Finding p. 31). We are confident the Court did not invite EPA to extend far beyond any reasonable interpretation of *Ethyl Corp.'s* acceptance of applying the CAA in a "precautionary" fashion, yet clearly that which EPA relies upon for its Finding.

If EPA is not seeking refuge in the idea that it is proceeding on the basis of the more catastrophic if – to combine models and observations, as EPA claims to do – least likely scenarios, the alternative appears to be accepting that EPA is arbitrary and capricious in

[15] This also implicates EPA's inconsistent treatment of other nations' theoretical, similar actions discussed elsewhere in these Comments, in that EPA acknowledges that it would regulate with the hope that this would, somehow, spur other nations which flatly reject such schemes to suddenly adopt them. This amounts to an EPA admission that abating the claimed threats are not, even accepting EPA's disproven GCM basis for its Finding, something that EPA or the U.S. alone could abate.

Finding that Man's GHG emissions – contributors at the margins to what is demonstrably a marginal climate influence, behind the sun, clouds, oceans, et al. – pose an "endangerment" by marginally impacting ever-changing and always-present weather and climatic phenomena.

III. EPA was arbitrary and capricious in selectively reviewing the scientific evidence

EPA is not accurate when it states, e.g., it "weigh[ed] and interpret[ed] the collective body of scientific evidence" (Finding p. 70). This is inextricably related to CEI's argument that EPA impermissibly outsourced its judgment to the cited bodies.

We note that, by highlighting EPA's false claims of having reviewed or considered the totality of the evidence, we do not establish some unreasonable standard of purity, but instead recognize a) that EPA recognizes the requirement that it exercise its own judgment, and admits that it violated this requirement, that b) by doing so, deferring to select, overlapping, self-referencing, non-peer-reviewed and conflict-ridden political bodies it inherently ignored an enormous body of relevant research, and c) other evidence, including some that we are filing with EPA in a different document, which will come out during this process also reveals a closed-mind to that which contradicts the Agency's apparently desired outcome.

Other examples of Agency arbitrariness on what it found worthy of what consideration include that the Administrator states it is "inappropriate" for her to consider adaptation, or the demonstrated, even ongoing responses by people to an always-changing climate in her determination as to whether a changing climate poses a threat (though she does cite individual behavior to make her case that some may place themselves at greater risk (p. 83), even though the literature is clear that individual behaviors in the face of warming overwhelmingly reduce risk[16]).

We disagree with EPA's refusal on this matter, but the Agency makes its case, which then redounds to the detriment of its own larger case. That is, she implicitly justifies continuing the regulatory process through this Finding[17] in part on the grounds that other people might undertake certain activities; that is, that it is entirely possible that someday other agencies may impose their own restrictions (p. 49) and other countries (e.g., pp. 116, 117). The former is purely speculative and the latter strangely ignorant of real-world circumstances, though both are offered in recognition that there is nothing that EPA can do to detectably impact that which it claims poses the endangerment.

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[16] See, e.g., Davis, R.E., Knappenberger, P.C., Novicoff, W.M., and P.J. Michaels, 2003. Decadal changes in summer mortality in the U. S. cities, *International Journal of Biometeorology*, 47, 166-175.

[17] "Under section 202(a), the Administrator is required to set 'standards applicable to the emission of any air pollutant' that the Administrator determines causes or contributes to air pollution that endangers." (p. 105). This statement also draws unflattering light on the Administrator's public attempt to dampen public concern over (attention to?) EPA's effort by claiming that it might not lead to regulation.

Further absurd is EPA's demurrer on the question of whether warmer or colder is more detrimental to human health – "it is currently difficult to ascertain the balance between increased heat-related mortality and decreased cold-related mortality" (p.83) – given that this is no different, except possibly less difficult, to ascertain than most of the alleged impacts EPA claims to have a high level of "certainty" about to justify its Finding. Yet although it is clear that cold kills vastly greater numbers than does heat, EPA waves off inquiry by claiming she "does not believe that it is now possible to quantify the various effects". (p. 84).

While dubious that may be to some extent true, though it certainly is less true possible to attribute anthropogenic impacts (which EPA says "is clear[ly]…adversely effecting" human health and that "adverse effects will increase and perhaps accelerate", (p. 88)); also, it is vastly less difficult to assess this empirical matter than project future climate.

For further example, EPA even stoops to claiming "there is evidence of" some threat or another (e.g., hot days and nights, p. 83) to justify its Finding, hardly inspiring confidence of statistical significance let alone causation or threat, while it also labors to ignore overwhelming evidence detrimental to this Finding, such as about GCM predictive capabilities.

These flexible and self-serving standards are arbitrary.

IV. EPA impermissibly defers to, relies upon and otherwise outsourced its statutory judgment to outside bodies

EPA specifically states in its Finding that it relied on outside compilations, and that "EPA took this approach rather than conducting a new assessment of the scientific literature" (p. 46). This statement alone, if especially when coupled with the fatal flaws of these outside sources to which EPA defers, dooms any prospect of EPA's Finding passing muster under relevant U.S. laws. Regardless, EPA then proceeds to regularly make statements such as "the scientific evidence clearly indicates" (e.g., Finding p. 69), when EPA acknowledges it did not review the scientific evidence, but outsourced that function to several groups of overlapping, conflict-ridden and widely discredited political enterprises.

Specifically, in its TSD EPA states that it relied upon a particular compendium of these outside sources, including :

Table 1.1, Core references relied upon most heavily in this document.

Science body/author	Short Title and Year of Publication
IPCC	Working Group I: The Physical Science Basis (2007)
IPCC	Working Group II: Impacts, Adaptation and Vulnerability (2007)
IPCC	Working Group III: Mitigation of Climate Change (2007)
CCSP	SAP 1.1: Temperature Trends in the Lower Atmosphere (2006)

CCSP	SAP 1.2: Past Climate Variability and Change in the Arctic and at High Latitudes (2009)
CCSP	SAP 1.3: Re-analyses of Historical Climate Data (2008)
CCSP	SAP 2.1: Scenarios of GHG Emissions and Atmospheric Concentrations (2007)
CCSP	SAP 2.3: Aerosol Properties and their Impacts on Climate
CCSP	SAP 2.4: Trends in Ozone-Depleting Substances (2008)
CCSP	SAP 3.1: Climate Change Models (2008)
CCSP	SAP 3.2: Climate Projections (2008)
CCSP	SAP 3.3: Weather and Climate Extremes in a Changing Climate (2008)
CCSP	SAP 3.4: Abrupt Climate Change (2008)
CCSP	SAP 4.1: Coastal Sensitivity to Sea-Level Rise (2009)
CCSP	SAP 4.2: Thresholds of Change in Ecosystems (2009)
CCSP	SAP 4.3: Agriculture, Land Resources, Water Resources, and Biodiversity (2008)
CCSP	SAP 4.5: Effects on Energy Production and Use (2007)
CCSP	SAP 4.6: Analyses of the Effects of Global Change on Human Health (2008)
CCSP	SAP 4.7: Impacts of Climate Change and Variability on Transportation Systems (2008)
NRC	Climate Change Science: Analysis of Some Key Questions (2001)
NRC	Radiative Forcing of Climate Change (2005)
NRC	Surface Temperature Reconstructions for the Last 2,000 Years (2006)
NRC	Potential Impacts of Climate Change on U.S. Transportation (2008)
EPA	Impacts of Global Change on Regional U.S. Air Quality(2009)
EPA	Inventory of U.S. Greenhouse Gas Emissions and Sinks (2008)
ACIA	Arctic Climate Impact Assessment (2004)

Further, EPA repeatedly reveals how important it views the notion that its Finding be based on "the best available scientific information" and "the best available scientific assessments", the latter being a different kettle of fish entirely and telegraphing EPA's decision to actually abdicate its responsibility to exercise judgment, by outsourcing its decision-making on the state of climate science to various outside bodies of various levels of politicization and exposure for non-scientific distortions of the actual science.

Relying instead on outside "assessments" also violates EPA's claim to have relied upon science that has "gone through rigorous and transparent peer review. The TSD therefore relies most heavily on the major assessment reports of both the Intergovernmental Panel on Climate Change (IPCC) and the U.S. Climate Science Program (CCSP)" (Finding p. 46). As noted below, these documents and processes underwent no such thing.

It is not that all information employed need be subjected to the (often abused) peer-review process. We simply note that EPA stakes so much on claiming its sources were peer-reviewed for a reason: it is claiming to rely on the best-of-the-best, when in fact quite the opposite is true. Indeed, the Administrator proves too much about its claims to using science subject to "rigorous peer review" and how hard EPA looked and how well it understands the relevant science involved. For instance, when stating that "[t]here is a very large and comprehensive base of scientific information that has been developed over many years through a global consensus process involving numerous scientists from many countries and representing many disciplines". (p. 28)

Of course, what EPA describes is the *political* process of the principal authority to which EPA appeals in its Finding, the *Intergovernmental* Panel on Climate Change (IPCC) made up of governmental representatives, producing a Summary for Policymakers upon which EPA mostly relies but which is not drafted by the scientists who actually performed the underlying work and, as described in these Comments and elsewhere, has been proven to misrepresent and selectively cite the underlying work and many scientists with whom it – and EPA – attempts to associate itself and its claims.

In fact, on several levels here EPA reflects simply a popular/political or layman's view of climate science, casting grave doubt on deference to be granted its decision to outsource its judgment and, we argue, admitting its own arbitrariness.

As we have already detailed for EPA and recapitulate here, these products it relies upon were largely conflict-ridden efforts with significant overlap of participants. Moreover, CCSP in particular has a growing, recently affirmed history[18] of misrepresenting the work of scientists it cites, when it isn't self-referencing, a discredited practice particularly egregiously incurred in the "climate" field by "federal scientists".[19] So, naturally, EPA claims to having the TSD "reviewed by a dozen federal government scientists" as implicitly somehow being independent reviewers, even credentialing them for this purpose by noting they "have contributed significantly to the body of climate change literature" though it turns out this is the same literature and these are largely the same authors were also responsible for the outside work EPA deferred to and that they are purportedly reviewing.

This effort at credentialing them repeatedly and curiously as "federal scientists" – presumably as a way of implying they are free from bias or agenda – also ignores or attempts to distract from their demonstrated lack of impartiality.

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[18] See, e.g., John Tierney, "U.S. Climate Report Assailed", *New York Times* online, June 18, 2009, http://tierneylab.blogs.nytimes.com/2009/06/18/us-climate-report-assailed/.

[19] See "Ad Hoc Committee Report on the 'Hockey Stick' Global Climate Reconstruction" for the Chairmen of the U.S. House Committee on Energy and Commerce and of the Subcommittee on Oversight and Investigations, Edward J. Wegman, David W. Scott, and Yasmin H. Said, National Academies of Sciences (Wegman Report), available at http://www.climateaudit.org/pdf/others/07142006_Wegman_Report.pdf; see also Testimony of Edward Wegman, United States House of Representatives, Committee on Energy and Commerce, July 27, 2006, http://republicans.energycommerce.house.gov/108/hearings/07272006Hearing2001/Wegman.pdf.

For this and other reasons EPA is simply wrong when it claims that "the TSD has therefore been developed and prepared in a manner that is consistent with EPA's" Information Quality Act Guidelines (p. 46), and this is also violative of EPA's own peer-review requirements, as detailed elsewhere in these Comments.

What is most astounding about EPA outsourcing its judgment is the egregiousness with which it did so. All four of these sources have been publicly exposed to one extent or another as biased and incomplete (including even the NAS's contract research arm, the NRC, though here we focus on the EPA's two principal sources, the IPCC ARs and the CCSP). They generally reflect their (often activist) authors' desires for they way they would like things to be, rather than the way that things actually are (we can say this because of the preponderance of these authors being noted climate catastrophists and activists). It is not that *the way things are* never overlaps with these authors' demonstrated, preferred worldview, though on the odd occasion when this is the case it does seem to be coincidence.

We assert that EPA should not defer, and quite likely cannot permissibly outsource judgment as it has, to the cited documents as premises for either a determination that carbon dioxide emissions from U.S. automobiles or section 202(a) sources endanger public health or welfare, or for regulations flowing from such a determination.[20]

A. EPA relies on that which it cannot publish: IPCC and CCSP violate EPA peer review requirements, and do not meet IQA requirements

1. Overview

We submit these comments mindful of the requirements of the U.S. Global Change Research Act of 1990 (USGCRA, 15 U.S.C. 2921 et seq.) and the Federal Information Quality Act (IQA, enacted as Section 515(a) of the FY 2001 Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-554)).

The former established the specific authority and parameters applicable to any information disseminated by covered agencies of the federal government in any way indicating adoption or acceptance of its content. The latter describes the level of scientific credibility and rigor required of any "highly influential" information disseminated by the federal government.

As regards the U.S. Climate Change Science Program, we note that EPA no longer claims to have relied on the USP, which has a record of comments deconstructing the demonstrably alarmist and biased content. However, its Draft did expressly rely on the USP, casting some doubt on its sudden abandonment of an erstwhile

[20] We particularly emphasize the utter impermissibility on its face of EPA relying on any IPCC "summary" documents, for myriad reasons including that they are political documents negotiated with pressure group activists, demonstrated on numerous occasions to not fairly represent – and often materially misrepresent – the underlying IPCC assessments.

principal resource. The same list of authors noted below does share that same history, however (see also their other involvement with EPA's Finding, below), and CCSP and its products remain burdened by the same biases, self-referencing, lack of balance and other fatal flaws as identified with the USP.

Both the CCSP documents and the Intergovernmental Panel on Climate Change (IPCC) Assessment Reports (ARs) are based upon unsupportable projections from unverifiable computer models. Further, they do not meet relevant requirements of peer review. Given that due to extant statutory and other legal constraints EPA could not permissibly publish or seemingly endorse either the CCSP documents or IPCC ARs, EPA also must eschew premising major decisions – including an "endangerment" determination, or rules flowing from such a determination if made – on such materials, products or output.

For example, IQA required the Office of Management and Budget (OMB) to issue government-wide guidelines, and each agency to issue agency-specific guidelines, "ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by the agency." Ultimately, OMB's Guidelines govern and all agency Guidelines must conform to them.

In its Guidelines,[21] OMB defines "quality" as the encompassing term, of which "utility," "objectivity," and "integrity" are constituent elements:

> "'Utility' refers to the usefulness of the information to the intended users.
>
> 'Objectivity' focuses on whether the disseminated information is being presented in an accurate, clear, complete, and unbiased manner, and as a matter of substance, is accurate, reliable, and unbiased.
>
> 'Integrity' refers to security—the protection of information from unauthorized access or revision…"

Information that EPA relies upon for its decision of whether to declare a CO2 "endangerment", and any regulations that would follow from that decision, should therefore at minimum be of sufficient quality that EPA could permissibly disseminate it.[22] Because CCSP reports and IPCC ARs fail numerous among IQA's and EPA's tests, EPA must look elsewhere to justify these significant undertakings.

In it ANPR EPA stated regarding the instant matter, "One point is clear: the potential regulation of greenhouse gases under any portion of the Clean Air Act could result in an unprecedented expansion of EPA authority that would have a profound effect on virtually every sector of the economy and touch every household in the land." There can be no

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[21] OMB 2002 (67 FR 9452), http://www.whitehouse.gov/omb/fedreg/reproducible2.pdf.

[22] EPA is a covered agency; EPA "Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Environmental Protection Agency", which are governed ultimately by the statute and OMB Guidelines, are found at http://www.epa.gov/quality/informationguidelines/documents/EPA_InfoQualityGuidelines.pdf.

dispute that whatever science-related information EPA elects to rely upon in this matter thereby inherently meets the threshold for influential scientific information.

Considering this and applicable restrictions, it is inappropriate for EPA to *rely* for these purposes upon information that could not satisfy EPA's Peer Review Standards or the IQA standards established by Congress and the Office of Management and Budget for influential scientific information.

2. CCSP and IPCC fail relevant peer review standards

We first explore the larger reasons that IPCC ARs and the CCSP reports are impermissible for EPA regulatory reliance, then the documents' specific, relevant shortcomings.

Legitimate peer review – although badly degraded in practice by the incestuous "climate" community as the report by Wegman et al. revealed[23] – is required of EPA by its Peer Review Policy before relying on any such "highly influential scientific assessment".[24] "EPA recognizes that influential scientific, financial, or statistical information should be subject to a higher degree of quality (for example, transparency about data and methods) than information that may not have a clear and substantial impact on important public policies or private sector decisions."[25]

Neither the CCSP reports nor the IPCC meet EPA's own peer review requirements, from the selection of reviewers all the way through the process.[26] The IPCC and CCSP reports are not peer reviewed in the implied sense, do not meet any objective requirements of a "peer review" standard, and do not credibly fall into the exception for summaries of peer reviewed work. Instead, both are demonstrably biased in panel composition, and in execution including through subjective compilations of select, preferred work, both assessments also having been exposed as serially citing their authors' own work. In addition to CCSP's unhappy history, IPCC has also been shown to be riddled with conflicts and is now demonstrated to have failed any attempt at credible peer review.

We note the National Academies of Science statement regarding the Agency and peer review:

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[23] See "Ad Hoc Committee Report on the 'Hockey Stick' Global Climate Reconstruction" for the Chairmen of the U.S. House Committee on Energy and Commerce and of the Subcommittee on Oversight and Investigations, Edward J. Wegman, David W. Scott, and Yasmin H. Said, National Academies of Sciences (Wegman Report), available at http://www.climateaudit.org/pdf/others/07142006_Wegman_Report.pdf; see also Testimony of Edward Wegman, United States House of Representatives, Committee on Energy and Commerce, July 27, 2006, http://republicans.energycommerce.house.gov/108/hearings/07272006Hearing2001/Wegman.pdf.

[24] *Peer Review and Peer Involvement at the U.S. EPA*, June 7, 1994 http://www.epa.gov/osp/spc/perevmem.htm.

[25] EPA IQA Guidelines at 6.3, p. 20.

[26] See e.g., *EPA Science Policy Council Handbook: Peer Review*. EPA 100-B-98-001 (Office of Science Policy, Office on Research and Development, U.S. Environmental Protection Agency, Washington, DC: U.S. EPA, 1998) and EPA's Risk Characterization Handbook (*Science Policy Council Handbook: Risk Characterization*, EPA 100-B-00-002, Washington, DC: U.S. EPA, December 2000).

> When scientific and technical information is used as part of the basis for a public-policy decision, peer review can substantially enhance not only the quality but also the credibility of the scientific or technical basis for the decision. After-the-fact criticisms of the science are more difficult to sustain if it can be shown to have been properly and independently peer reviewed.[27]

As previously noted, EPA choosing to declare an "endangerment" from CO2 in lieu of asking Congress for instruction would only invite litigation; to rely upon such improper documents as EPA seeks to rely upon as the basis for its decisions will only compound matters and dramatically for the worse.

The NAS report (on methods and process, as distinct from an NRC report making scientific pronouncements of scientific fact or understanding) documents that, over the years, and uneven though they may be in practice, EPA peer review practices and capabilities have undergone great scrutiny and improvements. This cannot be said of the processes producing either the CCSP reports or IPCC ARs. Further, the NAS and EPA's own internal documents affirm a strong presumption in favor of peer review for major scientific and technical work products that affect agency decisions, those "work products that are intended to support the most important decisions or that have special importance in their own right", barring extraordinary circumstances.

EPA's own handbook specifies that peer review should be conducted on scientific and technical work products that support even a research agenda, let alone a regulatory program, policy position, or other agency position or action. EPA IQA Guidelines make clear that such information, for EPA to in any way indicate endorsement of such information, also demands heightened scrutiny, scrutiny that CCSP reports and IPCC demonstrably have avoided.

As NAS notes:

> Examples of work products not to be reviewed are documents addressing procedural matters or policy statements. For work products supporting rule-making actions or site-specific regulatory decisions, [EPA's] handbook specifies that the peer review should be performed on the scientific or technical document, not the rules, regulations, or decisions themselves. It specifies that scientific and technical work products supporting major rules, including rules determined to be "significant" by the Office of Management and Budget under Executive Order 12866, should be closely scrutinized.

The science underlying an endangerment determination and/or GHG regulation clearly does not fall into the excluded categories, but is precisely what the Agency has long contemplated as the proper subject of peer review. EPA therefore cannot permissibly rely

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[27] "Strengthening Science at the U.S. Environmental Protection Agency: Research-Management and Peer-Review Practices", National Academies of Science, Commission on Life Sciences (CLS) Commission on Geosciences, Environment and Resources (CGER), Washington, DC (2000), p. 99. [http://books.nap.edu/openbook.php?record_id=9882&page=117]

upon CCSP reports or IPCC ARs as the basis for decisions of whether and how to regulate GHGs.

We are aware that Section 2.3 of EPA's peer review handbook exempts certain work products from peer-review requirements including derivative summaries or compendiums of previously peer-reviewed products. As detailed below, however, the IPCC and CCSP demonstrably fall outside of what this exception contemplates, if only for the refusal to substantively respond to criticisms, the gross conflicts and biases exposed in both products – particularly their selective citation of work supporting their desired argument to the exclusion of the preponderance of recent literature – such that they cannot be considered credible summaries of peer-reviewed products. They purport to survey the landscape of the relevant literature but in truth have been exposed as simply selecting that which fits their narrative.

EPA's ANPR recognized that the key extraordinary circumstance applying to the instant process is its potential significant, even unprecedented economy-wide impacts. As such, to be consistent with the obvious intent of EPA peer review policy developed over the years, in the instant case the presumption must be for more quality control, not less.

This is consistent with the Research Strategies Advisory Committee of the Science Advisory Board recommendation that EPA *expand* its peer review practices even beyond the "major scientific and technical work products", to, e.g., international work products considered important to environmental decision-making (**including, e.g., Section 2.2.10 of the handbook specifying review of scientific and technical work products produced by organizations other than EPA when they are used in EPA decision-making**).

Surely this indicates that any basis to support an EPA "endangerment" Finding, and other GHG regulatory decisions – particularly if a third-party product(s) – would be the most significant such work product to date and should be peer reviewed.
EPA could purport to subject CCSP, IPCC ARs et al. to its own internal peer review, though as noted in the sources cited, below, it is already apparent that neither can feasibly withstand scrutiny sufficient to, e.g., satisfy IQA requirements for dissemination by EPA with any appearance of adoption or approval. It thereby stands to reason that EPA cannot premise the most significant decisions in its history on such information.

We note NAS's emphasis on certain aspects of EPA's peer review Handbook uniquely applicable to the instant matter:

> For example, it emphasizes that peer review is not "peer input," sometimes called "peer consultation" – the involvement of experts, even outside experts, in the development of a work product – because adequate impartiality and detachment cannot be assumed for experts who participated in the creation of a document, even parts of it. It states that no amount of peer input can substitute for peer review by independent, third-party experts. It further stressed that peer review is not stakeholder input or consensus building [**NB: of particular relevance to the**

IPCC Summaries]; it is important to get the science correct before the values and policies are negotiated. It also distinguished peer review from public comment, such as that required by the Administrative Procedures Act or other statutes and obtained through the *Federal Register* or other means. [**NB: of particular relevance to the CCSP**]; It emphasized that peer review requires evaluation by individuals carefully chosen for relevant expertise and should focus on technical issues, whereas public comment is open to all individuals and all issues.[28]

In addition to CCSP, IPCC ARs et al. not having been subjected to legitimate peer review, their projections rely upon unvalidated – and arguably *invalidated* – computer models (detailed, below). This only enhances the urgency for EPA to ensure that whatever it elects to base its decisions upon satisfies EPA's own peer review requirement.[29] As NAS noted, "Many EPA rule-makings rely substantially on mathematical models that attempt to predict toxic risk, exposure, emissions, or other variables. It is important that the design, assumptions, and validation of such models be carefully peer reviewed".[30]

Also, while noting (if only in part) the current state of the science of climate modeling discussed in more detail, below, EPA itself asserts "EPA has developed considerable expertise in current global climate change research and has substantial experience in utilizing the available models to analyze GHG emissions."[31]

Demurring that the reports relied upon by EPA are *the best we've got* is of course not only not true – EPA could review the actual underlying science, as is its obligation – but is not sufficient to evade such requirements. It is inarguable that these products do not satisfy either the requirements of peer review generally, EPA's internal requirements specifically, or IQA.

B. IPCC Specifically Unsuitable for EPA Regulatory Reliance

The IPCC boasts that "the reports by the three Working Groups provide a comprehensive and up-to-date assessment of the current state of knowledge on climate change."[32] Yet, the IPCC actually excluded research produced later than two years prior its own February 2007 publication,[33] a window it selectively ignores except to include material consistent with its charter to support a future climate treaty. The two years preceding that Fourth

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[28] "Strengthening Science at the U.S. Environmental Protection Agency: Research-Management and Peer-Review Practices", p. 113.
[29] See, e.g., GAO (U.S. General Accounting Office). 1996. Peer Review: EPA's Implementation Remains Uneven. GAO/RCED-96-236. U.S. General Accounting Office, Washington, DC.
[30] "Strengthening Science at the U.S. Environmental Protection Agency: Research-Management and Peer-Review Practices", National Academies of Science, p. 106.
[31] Letter from Robert J. Myers, Principal Deputy Assistant Administrator, Office of Air and Radiation to Dale Hall and James Leaky, October 3, 2008.
[32] IPCC home page, http://www.ipcc.ch/, viewed on October 9, 2007.
[33] Various caveats made it possible for research to be cited if not published or in draft form by that date, but clearly this increased the likelihood that its inclusion would be even less subject to the IPCC's touted, and debunked, claim to stringent peer review. See, e.g., "IPCC Working Group I, Schedule for Fourth Assessment Report," UN IPCC, http://ipcc-wg1.ucar.edu/wg1/docs/wg1_timetable_2006-08-14.pdf.

Assessment Report (AR4) were notable for the preponderance of science emerging running strongly against the prevailing climate catastrophism, a development that was ignored although certain exceptions to that rule managed to find their way into AR4.[34]

We particularly note that the IPCC AR4 does not consider the discovery of important errors in NASA's U.S. surface temperature records which, when "corrected" (even if still "adjusted" by individuals with vested interests in a certain outcome), show the 1930s to be the hottest decade in the U.S. in the last century. Given that the U.S. has the least unreliable temperature records, this is a material fact.

On a related note, we see that despite claiming to have assessed greenhouse warming, EPA chooses to emphasize surface warming (p. 78) – which on its face is curious even for consideration for the obvious reason that AGW is not a surface-warming theory, and impermissible given the record of surface temperatures is so riddled with corruption that this is an enormous unforced error on EPA's part. This is drawn from the IPCC.

That EPA then dares claim "the well-established surface air temperature rise discussed above" (p. 72). The surface air records might be the most critically assailed and even fraud-riddled aspect of the case for Man-made global warming (see, e.g., the scandal about USHCN instrument placement exhaustively documented at http://wattsupwiththat.com; and the fraud case of Professor Wei-Chyung Wang is a star scientist in the Atmospheric Sciences Research Center at the University at Albany, New York documented at *inter alia* http://scientific-misconduct.blogspot.com/2009/05/allegations-of-fraud-at-albany-wang.html and http://wattsupwiththat.com/2009/05/03/climate-science-fraud-at-albany-university/). When EPA makes a rare lapse into the more-relevant, less-corruptible satellite data, it describes the record as beginning in 1978 without the critical context for the then-claimed warming, that 1978 was at the end of a three-decades-plus cooling and the coldest decade of the century (p. 72).

EPA claims sea level rise in the 20th century, which is meaningless on its face, as is "Sea level has been rising along most of the U.S. Atlantic and Gulf coasts." (p. 74) Yet both are clearly offered as if to represent a result of Man-made global warming. It compounds the supposed yet demonstrably false qualifier that SLR has accelerated (it has in fact stalled, with and possibly as a result of the recent cooling, as EPA would know had it not simply outsourced its responsibility to the IPCC). This does not stop EPA from making the demonstrably false claim that sea level "is currently rising at an increased rate" (p. 72). This is untrue, and unsupportable (see http://sealevel.colorado.edu/).

Further, however, in employing surface warming up to the year 2000 – in a Finding made in mid-2009 – EPA cuts-and-pastes from the IPCC which attaches to that GCM projections all of which show steady and rather linear warming, and all of which have been proved wrong. This seems not to bother EPA for a moment. (Then, on pp. 72-74,

[34] We direct EPA to a discussion of such developments at "Why the EPA should find against "Endangerment", Patrick J. Michaels and Chip Knappenberger, World Climate Report, November 19, 2008, http://www.worldclimatereport.com/index.php/2008/11/19/why-the-epa-should-find-against-endangerment/.

EPA then engages in a litany of ever-changing metrics to make its case, revealing that a straightforward, constant assessment of data would not do so.)

The IPCC summarily dismissed comments drawing attention to natural climate forces (e.g. El Nino influences, or the natural 'blocking high' that triggered the 2003 European heat wave).[35] Were the IPCC interested, and more objective, it could have also informed the public of significant if inconvenient new findings casting further doubt on its hypothesis of dangerous human-caused global warming, including apparent confirmation of climate sensitivity to a doubling of CO_2 at around one degree Celsius of warming.[36] It also could have considered recent research providing an updated and enhanced understanding of how tropical weather and clouds act as planetary cooling thermostats (Spencer et al, supporting Lindzen's "Iris effect"[37]); the effect on climate of natural oscillations over decades;[38] mechanisms whereby solar wind and magnetic effects may significantly influence climate;[39] and how the impact of incoming energy from the Sun is amplified near Earth's surface.[40] So the IPCC ARs may be a lot of things, but "up to date" now, let alone at the time of publication, they are not.

Here we also incorporate by reference the comments filed in response to EPA's ANPR by S. Fred Singer, PhD, for the Non-Governmental International Panel on Climate Change (NIPCC) which also detail IPCC and USP/CCSP bias, omission and other infirmities and lack of suitability as a basis for EPA GHG regulatory decisions.

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[35] McLean, John, "Peer review? What peer review? Failures of scrutiny in the UN's Fourth Assessment Report," Science and Public Policy Institute, September 2007, p. 8.

[36] Schwartz S. E. (2007), Heat capacity, time constant, and sensitivity of Earth's climate system, *J. Geophys. Res*., 112, D24S05, estimating climate sensitivity as an equilibrium temperature increase for doubled carbon dioxide of 1.1 ± 0.5 K, about one-third that of the most recent estimate by the IPCC. In 2008 Schwartz revised his estimate to 1.9 ± 1.0 K, still substantially lower than the IPCC claim (Schwartz S. E. (2008), Reply to comments by G. Foster et al., R. Knutti et al., and N. Scafetta on "Heat capacity, time constant, and sensitivity of Earth's climate system", *J. Geophys. Res*., 113, D15105).

[37] Roy W. Spencer, William D. Braswell, John R. Christy, Justin Hnilo, "Cloud and radiation budget changes associated with tropical intraseasonal oscillations," J. Geophys. Res., Vol. 34, L15707, doi:10.1029/2007GL029698, 2007, http://www.agu.org/pubs/crossref/2007/2007GL029698.shtml; it appears also that leading alarmists support this, see, e.g., Kevin Trenberth's comments at "The mystery of global warming's missing heat," http://www.npr.org/templates/story/story.php?storyId=88520025.

[38] See, e.g., Anastasios A. Tsonis, Kyle Swanson, and Sergey Kravtsov: Atmospheric Sciences Group, Department of Mathematical Sciences, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin, U.S.A. See August 2, 2007 Science Daily—"Synchronized Chaos: Mechanisms For Major Climate Shifts," discussed at http://www.sciencedaily.com/releases/2007/08/070801175711.htm.

[39] See, e.g., Svensmark et al., "Reply to Lockwood and Fröhlich - The persistent role of the Sun in climate forcing," Danish National Space Center, DNSC-Scientific report 3/2007 (PDF) at http://www.spacecenter.dk/publications/scientific-report-series/Scient_No._3.pdf/view; see also other studies and scientists confirmed the solar-climate link at http://scienceandpublicpolicy.org/sppi_reprint_series/a_critique_on_the_lockwood_frochlich_paper_in_the_royal_society_proceedings.html, http://www.globalwarminghysteria.com/blog/2007/7/17/no-sun-link-study-debunked-again.html, and http://scienceandpublicpolicy.org/sppi_originals/the_unruly_sunne_cannot_be_ruled_out_as_a_cause_of_recent_climate_variation.html.

[40] Charles D. Camp and Ka Kit Tung: Department of Applied Mathematics, University of Washington, Seattle, Washington, U.S.A. Source: *Geophysical Research Letters* (GRL) paper 10.1029/2007GL030207, 2007, discussed at http://www.sciencedaily.com/releases/2007/08/070801174450.htm; although one of the co-authors protests this study being cited in opposition to alarmism, in reality the paper is an important contribution affirming the solar-climate link.

Further, and as noted in the referenced NIPCC report, the IPCC is demonstrably an *advocacy* organization, not unbiased. A recent example is found in the following excerpt from a paper delivered by former IPCC author Dr. Richard S. Lindzen:

> The response of the IPCC officials makes it eminently clear that the IPCC is fundamentally a political body. If further evidence were needed, one simply has to observe the fact that the IPCC Summary for Policymakers will selectively cite results to emphasize negative consequences. Thus the summary for Working Group II observes that global warming will result in "Hundreds of millions of people exposed to increased water stress." This, however, is based on work (Arnell, 2004) which actually shows that by the 2080s the net global population at risk declines by up to 2.1 billion people (depending on which scenario one wants to emphasize)! The IPCC further ignores the capacity to build reservoirs to alleviate those areas they project as subject to drought (I am indebted to Indur Goklany for noting this example.)[41]

Also, as noted, the IPCC does not subject itself to anything resembling "peer review". Pasteur Institute Professor Dr. Paul Reiter, a leading expert on malaria who had to threaten legal action against the IPCC to have his name removed from the list of "2,000 of the world's leading scientists" who supposedly backed its summary though he most certainly does not, explains how the IPCC turns peer review "on its head."

> In professional science, the names of peer reviewers are kept confidential to encourage independent criticism, free of recrimination, while the deliberations of the authors being critiqued are made public….[But in the IPCC process] "The peer reviewers have to give their names to the authors, but the deliberations of the authors are strictly confidential." In effect, the science is spun, disagreements purged, and results predetermined.[42]

Independent researcher John McLean has performed the only detailed analysis of the IPCC's claim to "peer review". His review of the 2007 AR4 WGI ["The Physical Science Basis"] found that "The IPCC's editors could - and often did - reject the peer-reviewers' comments, a reversal of the normal practice in scientific peer-review. Analysis of the extent of the editors' refusal to accept criticism is difficult because the expressions of rejection come in many forms, some were partial and others were rendered otiose by the rewriting, restructuring or deletion of sections of text."[43]

McLean states that even if one merely considers comments that were greeted with "rejected," "reject" and "disagree," an analysis of the comments still "reveals that the

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[41] Richard S. Lindzen, "Climate Science: Is it currently designed to answer questions?", September 27, 2008, http://arxiv.org/ftp/arxiv/papers/0809/0809.3762.pdf.

[42] Solomon, Lawrence, "Bitten by the IPCC," *National Post* (CA), March 23, 2007, http://www.nationalpost.com/news/story.html?id=0ea8dc23-ad1a-440f-a8dd-1e3ff42df34f&p=1.

[43] McLean, John, "Peer review? What peer review? Failures of scrutiny in the UN's Fourth Assessment Report," Science and Public Policy Institute, September 2007, http://scienceandpublicpolicy.org/images/stories/papers/originals/mclean/mclean_IPCC_review_final_9-5-07.pdf, p. 4.

number of peer-reviewers' comments that were rejected by the IPCC averaged 25% (min. 9.5%, max 58.1%) of all comments on the Second Revision."[44]

McLean describes most rejections as being of "dubious nature," which is to say unsubstantiated. Some were simply absurd. "In several instances, reviewers invited the IPCC to express its conclusions with less certainty, and provided evidence in support of more caution given the uncertainties inherent in climate science. In almost every such instance, the IPCC's reviewers flatly rejected the reviewers' suggested moderations of its conclusions. *Some comments were rejected on the ground that there was not enough space.* Given the unconstrained length and supposed importance of the IPCC's assessment report, this ground of rejection is not compelling."[45]

It appears that the IPCC also keeps its reasons for rejecting many dissenting reviewer comments secret, or else they simply lack justification.

> Reviewers would cite references in the learned journals challenging the IPCC's conclusions, but in almost every instance they were told that a greater number of references supported an alternative argument. The correct approach, at the very least, would have been to insert in the assessment report a mention of the references that challenged the IPCC's conclusion.
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> Reviewers who made brief proposed amendments would often be brushed off by being told of just one paper that contradicted the suggested amendment. In at least one response *the IPCC's editors made reference to a document that had not been subjected to peer review at all.*[46] (emphases in original)

The IPCC's summary rejection of so many expert reviewers' comments flaunts the response contemplated by "peer review," which is to make the necessary change to the document or substantively explain why the comment is wrong and the change inappropriate. While reviewers had to justify the textual amendments which they were putting forward the responding editors were under no corresponding obligation to justify their rejections of the reviewers' proposals.[47]

While the SPM, for example, was actually written by only 52 authors, it was not "approved" by the claimed "over two thousand", a number that was rocked by the exposure that most of the Expert Reviewers did not in fact tangibly participate in the process, by commenting for example. McLean found that of the 54 non-governmental representatives reviewing the critical chapter that attributed recent warming to human activity, nearly one-third of them made just one comment.[48]

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[44] Id.
[45] Id. at 7 (emphasis in original).
[46] Id.
[47] McLean, John, "An Analysis of the Review of the IPCC 4AR WG I Report," October 2007, p. 12, http://mclean.ch/climate/IPCC_review_updated_analysis.pdf.
[48] McLean, John, "Peer review? What peer review? Failures of scrutiny in the UN's Fourth Assessment Report," Science and Public Policy Institute, p. 24.

The details of how many reviewers commented on how many sections and how those few comments were in great part disregarded are damning to the IPCC's supposed thoroughness and scientific clarity. They betray the widely claimed notion that the IPCC represents the input, let alone the work, of thousands of scientists, all of whom the IPCC nonetheless associates with the conclusions and even intimates substantively reviewed and/or signed off on the products.

Longtime IPCC "expert reviewer" Dr. Vincent Gray explains about the IPCC process, "Penetrating questions often ended without any answer. Comments on the IPCC drafts were rejected without explanation, and attempts to pursue the matter were frustrated indefinitely. Over the years…I have found increasing opposition by them to providing explanations, until I have been forced to the conclusion that for significant parts of the work of the IPCC, the data collection and scientific methods employed are unsound. Resistance to all efforts to try and discuss or rectify these problems has convinced me that normal scientific procedures are not only rejected by the IPCC, but that this practice is endemic, and was part of the organization from the very beginning.'"[49]

These results remind us that it was only the threat of the Freedom of Information Act applied to U.S. agencies for relevant documents that prompted the IPCC to, for the first time, make publicly available the reviewers' comments and editors' responses for the WG I report. This critical series of exchanges was now, after much criticism and frankly embarrassment, finally available for reconciliation with the product, allowing examination and refutation of the IPCC's claim to "peer review."[50]

Finally, the IPCC is burdened by glaring conflicts of interest among its participants. For example, McLean found that 31 of the 54 non-governmental representatives reviewing the critical chapter that attributed recent warming to human activity had a vested interest in the report as editors or having papers cited therein, leaving 23 who did not. 26 of these reviewers authored or co-authored papers cited in the final draft of the IPCC report, 10 of them even explicitly mentioned (that is at minimum relied upon with a complete lack of objectivity, and at worst simply promoted) their own papers in their review.[51]

So we know that only a handful of reviewers actually offered substantive comment, and among those most are conflicted out or, rather, would be in any transparent or credible process. Further, those who did comment were as a general proposition simply dismissed when their edits criticized the preordained conclusions, as detailed above. And of course

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[49] Solomon, Lawrence, "Bitten by the IPCC," *National Post* (CA), March 23, 2007, http://www.nationalpost.com/news/story.html?id=0ea8dc23-ad1a-440f-a8dd-1e3ff42df34f&p=1.

[50] See e.g., "Climate Science Anything but 'Clear', Mr. Baird: UN Climate Agency's implication that 2,500 scientist reviewers agree with its report is a deception," Media Release, Natural Resources Stewardship Project, November 19, 2007, http://www.nrsp.com/releases/release-07.11.19.html. The draft scientific reports are available at http://www.junkscience.com/draft_AR4/.

[51] McLean, John, "Peer review? What peer review? Failures of scrutiny in the UN's Fourth Assessment Report", p. 24.

a far greater number of relevant scientists than fifty-two have written to the UN specifically to protest such claims to scientific agreement.[52]

Highlighting the combination of the IPCC's self-dealing, conflicted and anti-peer-review approach, the IPCC even cited its own inadequately reviewed reports—that is, having undergone nothing such as is required for actual publication in a peer-reviewed journal—as the authority supporting its dismissal of comments.[53]

As such, it is inappropriate for EPA to then rely on, or ground an "endangerment" finding or any other GHG regulatory decision in, such information. The IPCC does not represent the "the latest scientific knowledge about the effects on public health and public welfare" as the Clean Air Act requires. That it is not "peer reviewed" as the term connotes to scientific journals, regulators or in any other setting is also beyond dispute now that the IPCC has been coerced into publishing expert reviewer comments and IPCC's response or lack thereof.

The point of all of this is that, far from representing that which EPA implies with and is connoted by the terms "peer-review", IPCC products are biased and unreliable. Finally, as we detail it is clear that IPCC reports upon which EPA would likely rely are written by a conflict-ridden handful of experts who have been exposed as reviewing and referencing their own work as authoritative, and cherry-picking literature supporting the predetermined stance for which IPCC was expressly chartered. Therefore, its assessments are not in any sense representative studies of the state of the relevant science.

1. Example: IPCC's key, unsupportable claim to certitude

One prominent IPCC claim in AR4 illustrates the impropriety of EPA relying upon IPCC assessment reports as bases for its decisions regarding GHG regulation. The first was the IPCC now claiming a 90 percent to 95 percent probability that human emissions of carbon dioxide are having a significant effect on climate—although total human emissions constitute about 2 percent to 3 percent of the total CO2 produced each year and are responsible at most for a *small fraction of one percent* of the greenhouse effect.

We recall that an October 2007 survey of U.S. scientists listed as contributing authors and reviewers of the IPCC's "Working Group I," "Climate Change 2007: The Physical Basis" found that only 20% of respondents claiming to believe that human activity is the principal driver of climate change.[54] IPCC cherry-picking, etc., does not change this.

The IPCC claim of 90% certainty is not supportable. Nothing has changed about Dr. James Hansen's statement made one decade ago, that "The forcings that drive long-term climate change are not known with an accuracy sufficient to define future climate

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[52] See letter from scientists to Ban Ki-moon, Secretary General of the United Nations, at e.g., "Don't fight, adapt," *National Post* (CA), December 12, 2007, http://www.nationalpost.comhtml?id=164002.
[53] Id.
[54] See http://www.DemandDebate.com/ipcc_survey.pdf.

change."[55] These forcings are the basis for computer models, which in turn are the basis of the IPCC's claims, and EPA's Finding. The Finding is thereby unsupportable.

As IPCC author John Christy described the IPCC's claim, "We are not told here that [the IPCC's "90%] assertion is based on computer model output, not direct observation. The simple fact is we don't have thermometers marked with 'this much is human-caused' and 'this much is natural'. So, I would have written this conclusion as 'Our climate models are incapable of reproducing the last 50 years of surface temperatures without a push from how we think greenhouse gases influence the climate. Other processes may also account for much of this change."[56]

Therefore, EPA's assessment of having weighed the totality of the evidence and concluded that from "the level of certainty with which we can reasonably project both near- and long-term climate change" (pp. 70-71) merely represents recitation of an IPCC claim that is without foundation. As such, EPA's Finding rests on a false premise.

We address the impropriety of EPA using GCMs for the stated purpose, below, but note that statistician William M. Briggs writes how the IPCC's confidence is "*conditional* on the model that [is] chosen being *true*. Since it is rarely certain that the model used *was* true, the eventual results are stated with a certainty that is too strong. As an example, suppose your statistical model allowed you to say that a certain proposition was true 'at the 90% level.' But if you are only, say, 50% sure that the model you used is the correct one, then your proposition is only true 'at the 45% level' *not* at the 90% level, which is, of course, an entirely different conclusion. *And if you have* no *idea how certain your model is, then it follows that you have no idea how certain your proposition is.* To emphasize: the uncertainty in choosing the model is almost never taken into consideration."[57]

As climate scientist Dr. Roy Spencer asks, rhetorically, "Why are ALL of the 20+ IPCC climate models more sensitive in their total cloud feedback than published estimates of cloud feedbacks in the real climate system (Forster and Gregory, *Journal of Climate*, 2006)? If the answer is that 'there are huge error bars on our observational estimates of feedback', then doesn't that mean that it is just as likely that the real climate system is very insensitive (making manmade global warming a non-problem) as it is to be as sensitive as the IPCC models claim it is?"[58]

In fact, the IPCC admits that when it comes to the nine mechanisms that can force climate change or "forcings", it possesses a low to medium "level of scientific

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[55] Hansen, et al., "Climate forcings in the Industrial era," Proceedings of the National Academy of Science, Vol. 95, 12753, 1998.
[56] Christy, John, "Viewpoint," BBC, November 14, 2007, http://news.bbc.co.uk/2/hi/science/nature/7081331.stm.
[57] William M. Briggs, "Statistics' dirtiest secret," William M. Briggs, Statistician blog, February 18, 2008, http://wmbriggs.com/blog/2008/02/18/statistics-dirtiest-secret/, (emphases in original).
[58] Roy W. Spencer, "Hey, Nobel Prize winners, answer me this," Science and Public Policy Institute, March 15, 2008, http://scienceandpublicpolicy.org/images/stories/papers/commentaries/nobel_winners_answer_me.pdf.

understanding " (LOSU) for seven, and a high LOSU for only two. Then it somehow excludes *water vapor altogether* from its list of greenhouse gases,[59] given that water vapor is responsible for somewhere above 95 percent of the greenhouse effect and is closely related to clouds—another key forcing the IPCC admits it does not understand.

As Middlebury College's Jim Peden states about the IPCC's claim of certainty despite admitting it does not understand the impact of water vapor, this is similar to concluding that the human race is all male, after eliminating females from consideration in gender demographics because "they are not well understood."

Further, consider the following recent assessment by The Scientific Alliance (UK) about the lack of confidence we (and EPA) should have in other key assumptions used by IPCC's GCMs:

> The IPCC's projections for the future effects of climate change are generated, as is well known, by an array of computer models which attempt to reproduce the highly complex inter-connected aspects of the Earth's atmosphere and climate. This approach has often been criticised because it places undue reliance on a set of assumptions and treats the output as though it represented reality. But, setting aside these concerns, what if some of the basic data used as inputs for the models was wrong? As the saying goes, "garbage in, garbage out".
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> Serious questions have previously been asked about the economic growth scenarios used. Broadly, these assume growth rates for developing countries which many economists regard as unrealistically high, leading to a modelled global economy which, by the end of the present century, would have a much greater energy demand than would be likely for more reasonable rates of growth. David Henderson and Ian Castles also pointed out in 2002 that economic growth was modelled on the basis of market exchange rates rather than the more meaningful purchasing power parity, again artificially inflating the size of many economies. Even the lowest growth scenario postulated a 70-fold increase in GDP/capita for developing countries in Asia from 1990 to 2100. Nothing close to this has ever been achieved before.
>
> But there are other areas of concern. The IPCC "business as usual" baseline assumes limitless supplies of fossil fuels over the next century or more, such that the vast increase in energy needed to enable the enormous projected growth in the global economy would essentially all be supplied by oil, gas and coal. The underlying trend of reducing carbon intensity in growing economies does not seem to have been taken into account, but there is an even more basic issue regarding exploitable reserves of fossil fuels.
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> According to the 2009 BP Statistical Review of World Energy, proven reserves of oil stand at 1,258bn barrels (42 years at current consumption rate), of gas 185 trillion cubic metres (60.4 years) and coal 826bn tonnes (122 years). Total world

[59] United Nations Intergovernmental Panel on Climate Change, Third Assessment Report, 2001b, p 37.

energy consumption in 2008 was 11.3bn tonnes of oil equivalent (btoe), including nuclear, hydro and other forms of power.

Reserves are a flexible concept, since they increase not only as more discoveries are made but also as prices increase so as to make the more difficult-to-reach reserves economic to exploit. Thus, in the case of oil, the reserves-to-production ratio has risen with time (even as consumption has increased) and remained above 40 years for the last decade. Some economists therefore see fossil fuel resources as effectively infinite: as the price rises, so do exploitable reserves. Of course, once the price rises too far and remains there, the incentive to use other forms of energy increases greatly. So consumption of oil, gas or coal would be expected to fall steadily as it becomes more difficult to extract it at the same rate.

But there is another school of thought, which believes in the concept of Peak Oil. As a global concept, it is an extension of the (correct) prediction made by geophysicist King Hubbert in 1956 that US oil production would peak around 1970, even with the most optimistic view of likely reserves. Others have previously questioned the likelihood of IPCC assumptions on fossil fuel use being right, but Prof David Rutledge of Caltech has analysed the situation in some detail. (Readers can access Prof Rutledge's lecture and slides at http://rutledge.caltech.edu/ and form their own opinion.)

Not only does he conclude that exploitable global oil reserves are finite, but he questions the prevailing view that there are sufficient coal reserves for well over a century (indeed, unlike oil, proven coal reserves have fallen over recent decades). He estimates total exploitable reserves of oil, gas and coal at 938 Gtoe (gigatonnes oil equivalent). On that basis, we have already used about 40% of the total, and 90% of total resources would be exhausted by 2068.

Compare this with the IPPC view from their Fourth Assessment Report (AR4). The scenario which gives the lowest economic growth and energy usage figures still projects cumulative fossil fuel use by 2100 of more than the total reserves estimated by Prof Rutledge. Other scenarios project at least twice this figure, with usage still accelerating at the beginning of next century. But using the figure of 938 Gtoe, the projected peak for atmospheric carbon dioxide concentration is 450ppm, and calculated average temperatures would rise by 2°C, assuming the IPCC figure of 3° rise for a doubling of CO_2 level.

If this view is right, all the effort currently aimed at drastically reducing carbon dioxide emissions is unnecessary, as peak atmospheric concentrations of the gas and the likely average temperature rise fall below what is considered to constitute "dangerous" climate change. If the conclusions are only part correct, and total reserves are underestimated, this work still calls into question the more extreme of the IPCC scenarios, under which fossil fuel use would still be growing strongly by the turn of the century.

> Either way you look at it, this suggests that much of the output of the IPCC's models bears little relationship to the real world. With so much at stake, the least we can expect is for scientists and policymakers to make sure that they are using the right data. Garbage in, garbage out.[60]

Given these truths and others described below it is implausible to credibly assert that authorship by a few dozen scientists and some government representatives, working in coordination with a handful of pressure group lobbyists, represents an "overwhelming consensus" or even fairly represents the preponderance of the contemporary literature.

As such, we argue that the IPCC Assessment Reports – and particularly the egregious Summaries in their various forms upon which regulators might even seek to rely – could never survive challenge under the IQA if disseminated by a covered Agency in any way constituting endorsement or acceptance as its own conclusions. We argue that these reasons make it impermissible for EPA to premise regulation of GHGs on IPCC.

Therefore, we cannot stress enough the impropriety of relying on IPCC assessment reports for EPA's stated purpose. It is also in poor service to the regulated community and taxpayer for EPA "to use the most recent IPCC reports, including the chapters focusing on North America, and the U.S. government Climate Change Science Program synthesis reports as scientific assessments that could serve as an important source or as the primary basis for the Agency's issuance of "air quality criteria." This is equally true for any other aspect of EPA's GHG regulatory decisions.

2. Other sources having assessed IPCC shortcomings

In support of this argument we also incorporate by reference the work by John McLean cited above as well as "Prejudiced authors, Prejudiced findings: Did the UN bias its attribution of "global warming" to humankind?",[61] "The IPCC report: What the lead authors really think,"[62] and Senate testimony by MIT's Dr. Richard Lindzen.[63]

For EPA's consideration of this particular question, we also incorporate by reference and ask EPA to consider the reports further discussing problems with the analyses and processes of the IPCC and CCSP found in the NIPCC report "Nature, Not Human Activity, Rules the Climate",[64] "On The IPCC's Case For Anthropogenic Global Warming",[65] and "The IPCC: on the Run at Last".[66]

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[60] Scientific Alliance (UK) Newsletter, June 19, 2009, available at http://www.scientific-alliance.org/.
[61] July 2008, http://scienceandpublicpolicy.org/images/stories/papers/originals/McLean_IPCC_bias.pdf.
[62] Ann Henderson-Sellers, Science and Public Policy Institute, September 2008, http://scienceandpublicpolicy.org/images/stories/papers/reprint/sellers_ipcc.pdf.
[63] "Testimony of Richard S. Lindzen before the Senate Environment and Public Works Committee on 2 May 2001", available at http://www-eaps.mit.edu/faculty/lindzen/Testimony/Senate2001.pdf.
[64] Science and Environmental Policy Project / S. Fred Singer, published by The Heartland Institute (2008), available at http://www.heartland.org/custom/semod_policybot/pdf/22835.pdf.
[65] Roger W. Cohen, Science and Public Policy Institute, July 2008, http://scienceandpublicpolicy.org/images/stories/papers/commentaries/Roger_Cohen-On_IPCCs_view_of_AGW.pdf.

Further, **we incorporate by reference and particularly direct EPA's attention to the Report of the UK Parliament's All Party Select Committee on Economic Affairs**.[67] It evaluates the subject of man-made global climate change and:

> (a) condemns the IPCC for its bias, and "unsound process" in which political authors misrepresent the substance of the underlying, scientific work thereby making sound science an impossible result (particularly citing the AR "summaries", which we again urge EPA to avoid),
> (b) calls for an independent assessment of climate change (which CCSP reports do not constitute),
> (c) recommends rejection of mitigation options (e.g. Kyoto Protocol) because they would not be cost-effective (which EPA seeks comment on instead *advancing*), and
> (d) suggests adoption of adaptation options that would be cost-effective.

We particularly draw EPA's attention to Chapters 4 ("Forecasting greenhouse gas emissions and Temperature Change"[68]) and 7 ("The IPCC Process"[69]). Nothing to date has refuted the Select Committee's investigation, analysis and findings.[70]

C. CCSP Products Not Suitable for EPA Regulatory Reliance

Having enumerated why the IPCC is unsuitable for the task to which EPA seeks to put these assessment reports, we confront the issue of EPA relying instead on relevant scientific assessments that *are* subject to IQA, such as CCSP products. Here, too, EPA finds no safe harbor for reliable, let alone peer reviewed assessment of the state of the science.

We refer EPA to, and specifically incorporate in the present Comments by reference, CEI's comments on the draft USP, submitted formally to NOAA per its

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[66] Dr. Robert M. Carter, "The IPCC: on the Run at Last", March 2008, reprint available at http://scienceandpublicpolicy.org/images/stories/papers/reprint/Carter-IPCC_on_the_run.pdf.
[67] House of Lords Session 2005-06, Economic Affairs Committee Publications, Economic Affairs - Second Report, available at http://www.publications.parliament.uk/pa/ld200506/ldselect/ldeconaf/12/1202.htm.
[68] http://www.publications.parliament.uk/pa/ld200506/ldselect/ldeconaf/12/1207.htm
[69] http://www.publications.parliament.uk/pa/ld200506/ldselect/ldeconaf/12/1210.htm
[70] We also note that while this Select Committee Report was so embarrassing to the UK government that it commissioned Sir Nicholas Stern to assess potential total costs if all worst-case scenarios for man-made global climate change were to come true – a rather absurd charge given the improbability of worst-case scenarios coming true, particularly all of them – nothing, not the politically helpful if academically discredited Stern. Re: the latter, climate economist Dr. Richard Tol of the University of Hamburg reassessed the economic literature on the costs of global warming, finding that the likely actual lifetime cost to the world of each ton of carbon dioxide released is very small, about 6% of the amount commonly touted by the establishment. William Nordhaus of Yale University, who has been estimating the economic costs of climate change since the 1970s, explains that the establishment's numbers are not based on any new economics, science, or modeling but on a radical new way of treating the present valuation of future costs, for this *ad hoc* situation, alone (until others decide that this new approach ought to be employed elsewhere, as well, to impede progress in other fields). Tol notes that there is little funding support for research exposing that the costs of "global warming" tax and regulatory schemes are vastly greater than their potential benefit, because the results are unpopular with climate policymakers.

Federal Register Request for Comment. Specifically, these are by Christopher C. Horner[71] and Marlo Lewis, PhD.[72] CCSP responded to some of the more obvious and egregious violations of IQA when releasing its final report in June 2009, but on its face that document continues CCSP's history of producing unsupportable alarmism.

CCSP documents lack peer review and continue to flaunt author and reviewer conflicts.[73] Absent the actual characteristics of peer review as commonly accepted and as affirmed in OMB's relevant Bulletin, CCSP reports do not satisfy peer review requirements. This is important for reasons of EPA peer review requirements for scientific reports.

Other comments detailing further specifics of why CCSP violates its statutory authorization and the IQA, and which we also submit to the record by incorporating them reference for EPA's consideration, are available at http://www.globalwarming.org/nationalassessment. These specifically include comments by S. Fred Singer, Ph.D. of the Science & Environmental Policy Project, Kenneth Haapala of the NIPCC, Dr. Madhav Khandekar, a retired meteorologist formerly with Environment Canada , Patrick J. Michaels, Senior Fellow in Environmental Studies, Cato Institute and Professor of Environmental Sciences, University of Virginia, Paul C. Knappenberger of New Hope Environmental Services, and meteorologist Joseph D'Aleo.

All of which is to say that it is not appropriate, and is arguably impermissible, for EPA to rely upon CCSP reports when making its "endangerment" finding or otherwise making regulatory decisions regarding GHGs. Instead, EPA arguably may choose peer reviewed analysis to rely upon, though this too must be performed in a non-biased fashion representing the preponderance of the applicable, contemporary scientific literature.

For example, as with the IPCC's conflicts that John McLean exposed, CEI has detailed the bias in the CCSP including selection of which work to cite. CCSP (like the IPCC) fails any assessment for objectivity in that, e.g., its authors and reviewers reflect not even the slightest overture toward attaining substantive balance and regularly self-reference. For these reasons and those contained in the referenced comments, and those detailed below, EPA should not rely on CCSP reports for the intended purpose in making regulatory determinations regarding GHGs.

D. ACIA Not Suitable for EPA Regulatory Reliance

EPA relies upon the 2004 Arctic Climate Impact Assessment as one of the compendia by outside panels to which it defers in making its Finding. Yet ACIA has been exposed as advocacy by, for example, curiously selecting 1966 as its baseline year which, upon

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[71] At http://cei.org/PDFs/nationalassessment/Christopher%20Horner.pdf, specifically detailing USP's lack of peer review.

[72] At http://cei.org/PDFs/nationalassessment/Marlo%20Lewis.pdf.

[73] See "Strengthening Science at the U.S. Environmental Protection Agency: Research-Management and Peer-Review Practices", p. 113, cited above in FN 15; see also "Memorandum for Heads of Departments and Agencies," re: Issuance of OMB's "Final Information Quality Bulletin for Peer Review", December 16, 2004, Executive Office of the President, Office of Management and Budget, http://www.whitehouse.gov/omb/memoranda/fy2005/m05-03.pdf, esp. pp. 2-5, 21-22.

scrutiny, was less oddly arbitrary than it was cherry-picked as the Arctic's coldest year in the three-decades-plus cooling trend, thereby exaggerating and even creating the warming trend it touted to gain attention for its claims. Further, ACIA included unsubstantiated claims about polar bear populations which were promoted by the pressure group World Wildlife Fund, showing that certain hypotheses which were deemed to "good" to bother fact-checking turned out to be too "good" to be true.

We note that ACIA makes statements that temperature changes in the Arctic provide an early indication of global warming, although sediment and ice core samples show that the Arctic has experienced past warming that can not be attributed to greenhouse gas concentrations. Arctic air temperatures also have a history of strong year-to-year variability. So as with other aspects of the debate, barring advances in Arctic climate science, in both models and measurements, citing ACIA as an authority or even partially complete picture of Arctic climate understanding is unfounded.

We incorporate by reference criticisms of ACIA claims by climatologists Dr. Patrick J. Michaels and Dr. Paul C. Knappenberger (with citations to relevant research challenging the claims), posted on World Climate Report at http://www.worldclimatereport.com/ index.php/2004/ 11/30/a-long-term-perspective/#more-22, http://www.worldclimate report.com/index.php/2004/11/17/polar-bear-facts/#more-27, and http://www.world climatereport.com/ index.php/2004/11/15/predictable-distortion/.

E. EPA Mischaracterizes NRC Report, which does not support Finding

We note in particular one of the National Research Council reports cited by EPA as supporting its Finding, which misrepresents the document just as the popular media did with equal if not greater zeal. MIT's Dr. Richard Lindzen, one of the report's authors, wrote in the *Wall Street Journal*[74] to respond to these misrepresentations and ably summarizing numerous problems with EPA's effort:

> As one of 11 scientists who prepared the report, I can state that…the NAS never asks that all participants agree to all elements of a report, but rather that the report represent the span of views. This the full report did, making clear that there is no consensus, unanimous or otherwise, about long-term climate trends and what causes them.
>
> As usual, far too much public attention was paid to the hastily prepared summary rather than to the body of the report. The summary began with a zinger--that greenhouse gases are accumulating in Earth's atmosphere as a result of human activities, causing surface air temperatures and subsurface ocean temperatures to rise, etc., before following with the necessary qualifications. For example, the full text noted that 20 years was too short a period for estimating long-term trends, but the summary forgot to mention this.

[74] Richard S. Lindzen, "The Press Gets It Wrong: Our report doesn't support the Kyoto treaty", *Wall Street Journal*, June 11, 2001.

Our primary conclusion was that despite some knowledge and agreement, the science is by no means settled. We are quite confident (1) that global mean temperature is about 0.5 degrees Celsius higher than it was a century ago; (2) that atmospheric levels of carbon dioxide have risen over the past two centuries; and (3) that carbon dioxide is a greenhouse gas whose increase is likely to warm the earth (one of many, the most important being water vapor and clouds).

But--and I cannot stress this enough--we are not in a position to confidently attribute past climate change to carbon dioxide or to forecast what the climate will be in the future.

That is to say, contrary to media impressions, agreement with the three basic statements tells us almost nothing relevant to policy discussions.

One reason for this uncertainty is that, as the report states, the climate is always changing; change is the norm. Two centuries ago, much of the Northern Hemisphere was emerging from a little ice age. A millennium ago, during the Middle Ages, the same region was in a warm period. Thirty years ago, we were concerned with global cooling.

Distinguishing the small recent changes in global mean temperature from the natural variability, which is unknown, is not a trivial task. All attempts so far make the assumption that existing computer climate models simulate natural variability, but I doubt that anyone really believes this assumption.

We simply do not know what relation, if any, exists between global climate changes and water vapor, clouds, storms, hurricanes, and other factors, including regional climate changes, which are generally much larger than global changes and not correlated with them. Nor do we know how to predict changes in greenhouse gases. This is because we cannot forecast economic and technological change over the next century, and also because there are many man-made substances whose properties and levels are not well known, but which could be comparable in importance to carbon dioxide.

What we do is know that a doubling of carbon dioxide by itself would produce only a modest temperature increase of one degree Celsius. Larger projected increases depend on "amplification" of the carbon dioxide by more important, but poorly modeled, greenhouse gases, clouds and water vapor.

…The panel was finally asked to evaluate the work of the United Nations' Intergovernmental Panel on Climate Change, focusing on the Summary for Policymakers, the only part ever read or quoted. … Within the confines of professional courtesy, the NAS panel essentially concluded that the IPCC's Summary for Policymakers does not provide suitable guidance for the U.S. government.

> The full IPCC report is an admirable description of research activities in climate science, but it is not specifically directed at policy. The Summary for Policymakers is, but it is also a very different document. It represents a consensus of government representatives (many of whom are also their nations' Kyoto representatives), rather than of scientists. The resulting document has a strong tendency to disguise uncertainty, and conjures up some scary scenarios for which there is no evidence.
>
> Science, in the public arena, is commonly used as a source of authority with which to bludgeon political opponents and propagandize uninformed citizens. This is what has been done with both the reports of the IPCC and the NAS. It is a reprehensible practice that corrodes our ability to make rational decisions. A fairer view of the science will show that there is still a vast amount of uncertainty--far more than advocates of Kyoto would like to acknowledge--and that the NAS report has hardly ended the debate. Nor was it meant to.

We suggest EPA not selectively invoke documents as such, even if it is the best the Agency has to claim support for this Finding.

V. Impermissibility of Relying on GCMs, Directly, or Indirectly via CCSP and IPCC

As Lord Nigel Lawson points out in his book "An Appeal to Reason: A Cool Look at Global Warming",[75] the promotion of GCMs as having any predictive capabilities – or even the ability to credibly "project" – is a public relations mantra, and even the United Nations Intergovernmental Panel on Climate Change scientists to whom EPA defers do not claim they have any forecasting ability despite on occasion giving the opposite impression. These admissions are detailed elsewhere in these Comments.

As the Scientific Alliance (UK) recently noted about the strange elevation of models over observations by a scientific establishment apparently desperate to establish a particular viewpoint:

> Scientists often model systems to predict what effects might be expected if variables change in a certain way. In the absence of anything resembling evidence for the causative effect of global warming, computer modelling was enthusiastically embraced to project likely changes on the basis of the understanding of how climate worked. So far, so good, but the output from these models, rather than being seen as indications of what might happen if the hypothesis was right, have taken the place of experimental observation.
>
> So, in a circular argument, the models which are based on a particular hypothesis (the greenhouse effect with positive feedback) are taken to "prove" the hypothesis because they reproduce the pattern of twentieth century temperature change. [NB: see below for the critical qualification of this claim] Similarly, the projections for

[75] Gerald Duckworth & Co Ltd, United Kingdom (10 April 2008).

> future temperature rise (which, we should remember, cover a large range) are regularly quoted as what *will* happen if carbon dioxide emissions are not drastically cut back.
>
> In the meantime, the belief in the greenhouse has hypothesis is such that legitimate criticism based on contradictory evidence - the lack of predicted warming of the upper troposphere, the measured cooling of Antarctica, the lack of change in the rate of sea level rise or the failure of the models to explain or predict recent temperature trends, for example - are dismissed as the propaganda of paid lobbyists or cranks. All societies will gain if we make sure we understand the problem before taking corrective action rather than jump on the currently fashionable bandwagon. Addressing critics' questions seriously is a necessary first step.[76]

Both the IPCC ARs and CCSP eschew historical observations as the basis for their projections upon which EPA would putatively rely. They rely instead on general circulation models (GCMs). Therefore, we specifically note this as a further reason that it is improper for EPA to premise an "endangerment" decision, or subsequent GHG regulations, on these assessment reports. To so rely would be to plainly base EPA's regulatory decisions on the output of unverifiable yet demonstrably flawed GCMs. The same logic applies as discussed above: if as a matter of statute (as well as due to problems arising from EPA's own peer review requirements) something is insufficiently credible for EPA to publish as authoritative or in any way implying endorsement, it is unsuitable to serve as the premise for critical GHG regulatory decisions.

In short, the IPCC clearly overestimates climate sensitivity through the models it uses. The IPCC operates from a threshold assumption that the climate system is very fragile, in that it has a high sensitivity to, e.g., a doubling of carbon dioxide concentrations from levels presumed as extant during pre-industrial times. Recent observations, however, reveal that this is not true, but that the climate is far less sensitive to increased GHG concentrations (particularly the increased CO2 concentrations) than assumed by any of the climate models used by the IPCC for their projections upon which EPA would rely.

Therefore we also note that EPA has ignored more recent assessments of modeling even by the more alarmist "warming establishment" (e.g, Keenlyside, Tsonis and Swanson). These authors at least deemed it necessary to acknowledge and take into account real-world observations (no warming) and adjust their program. Of course, they still tune to a too-high sensitivity, and build in speculative feedbacks (essentially "curve-fitting" their program to explain recent, uncooperative climate) and therefore are not reliable. But they, unlike others relied upon directly and directly by EPA in its Finding, at least bring their flawed approach up to date by considering recent, un-projected climatic activity.

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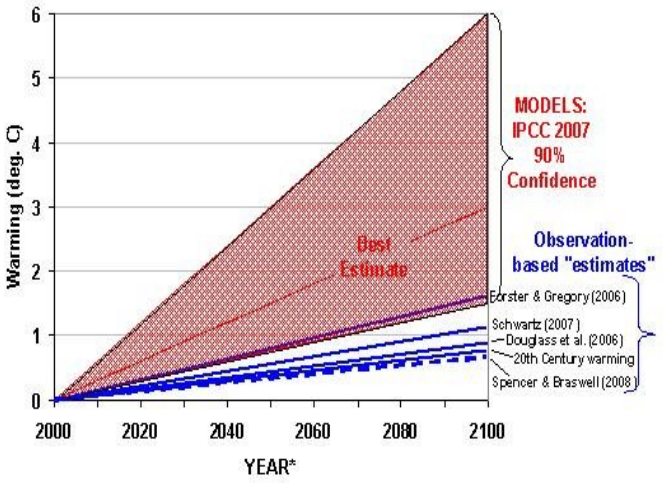
[76] Scientific Alliance Newsletter June 12, 2009, available at http://www.scientific-alliance.org/.



[77]

In truth, no GCM is capable of modeling recent observed climatic behavior, particularly temperatures which are key to EPA's analysis. This is despite that GCMs *do* in fact model El Nino, for example, so that possible excuse for GCM failure to credibly project the past decade of temperatures is no crutch. **We incorporate by reference Dr. S. Fred Singer's NIPCC comments on the CCSP USP, and on EPA's Finding, specifically the discussion of models and recent literature addressing the sensitivity issue, in our own comments.**

It is insufficient for purposes of, e.g., IQA requirements that modelers claim to have improved GCM output or that GCMs are considered by many the *least unreliable* tool for projecting future climate. That latter claim, particularly, is simply too subjective to be persuasive or a sufficient defense for these purposes. The inarguable fact, proven by recent observations though regularly admitted, *de facto*, by climate modelers, is that no GCM credibly models climate. As such, it is impermissible to ground policy in GCMs.

Here we specifically incorporate by reference CEI's Comments on NOAA's USP (Horner), especially its discussion on the CCSP's impermissible reliance upon GCMs, at pages 23-34.

The IPCC accepted, in its Third Assessment Report (2001), that the climate is "a complex, non-linear, chaotic object", and, consequently, that "long-term prediction of climate states is impossible". In its Fourth Assessment Report the IPCC rephrased but nonetheless did not disown this damning admission. Yet the IPCC proceeds to do the impossible by offering predictions, based on an assumed climate sensitivity that is already being proved an exaggeration by the failure of temperatures to rise as the computer models had predicted (or, recently, at all).

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[77] Chart courtesy of Dr. Roy W. Spencer, from "Global Warming as a Natural Response to Cloud Changes Associated with the Pacific Decadal Oscillation (PDO)" (posted October 19, 2008 in a simplified version of a paper submitted to and pending before *Geophysical Research Letters*; Spencer's discussion of the same title is available at http://icecap.us/index.php/go/in-the-news/global_warming_as_a_natural_response_to_cloud_changes_associated_with_the_p/; the full paper is pre-posted at http://www.weatherquestions.com/Global-warming-natural-PDO.htm.

Updated research into, or at least attempts to explain away, model failure (e.g., Keenlyside 2008[78]) has taken into account real-world observations, and assessed that the current cooling could be one of 15-40 years. No GCM employed by IPCC, et al., predicts this. It is unsupportable to attempt to smother this outcome with the tired and substantively slothful claim that this remains "consistent with" the GCM outputs which serve as the basis for IPCC and CCSP. **If we do not have the ability to credibly model climate then we cannot credibly base policy on models.**

Other objections, for example that captured above by the Scientific Alliance that models (be they GCMs or other) are simply too much a fixture in policymaking, are not only insufficient to overcome statutory requirements for data quality, but also ignore that GCMs are uniquely ill-suited for this particular purpose.

Instead of CO2 driving climate or temperatures as models assume, what is increasingly obvious is the strong correlative relationship between the Pacific Decadal Oscillation (PDO) – the PDO having experienced phase shifts coinciding with the major periods of warming and cooling in the 20th Century – as well as the Atlantic Multi-decadal Oscillation (AMO), which is much stronger than that between CO2 and climate change[79] including as much as two-thirds of the warming (given the PDO's modulation of global average cloudiness, as confirmed by satellites).[80] Models do not capture this.

Further, siting and other errors involving surface temperature measurements appear likely to also have contributed greatly to the recent recorded warming, at least as much as anthropogenic CO2 emissions (global, let alone what mere U.S. or U.S. motor vehicle emissions could ever hope to contribute).[81] When one considers that models continue to "show" more warming than has been observed, despite such corrupting influences, this further exposes the models' failure.

Add the correlation between solar activity and climate/temperatures – again, far greater than between, e.g., CO2 emissions and/or concentrations[82] – and it becomes transparent

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[78] *Nature* 453, 84-88, May 2008, "Advancing decadal-scale climate prediction in the North Atlantic sector", available at http://wattsupwiththat.files.wordpress.com/2008/05/keenlyside_nature_may_2008.pdf.

[79] See e.g., "Implications of PDO, NAO, Glacial Fluctuations, and Sun Spot Cycles for Global Climate in the Coming Decades", by Dr. Don Easterbrook, Professor of Geology at Western Washington University, at http://icecap.us/images/uploads/GSA.pdf, and "Ignoring a Natural Event to Blame Humans: By ignoring a natural event scientists blame climate changes on human activity", by John McLean at http://icecap.us/images/uploads/Walker_Circ_2.pdf.

[80] See also Spencer, "Global Warming as a Natural Response to Cloud Changes Associated with the Pacific Decadal Oscillation (PDO)", noted above in FN 59.

[81] See, e.g., McKitrick, R. and Michaels, P., "Quantifying the influence of anthropogenic surface processes and inhomogeneities on gridded global climate data," *Journal of Geophysical Research*, Vol. 112, D24S09, doi:10.1029/2007JD008465, 2007, available at http://www.uoguelph.ca/~rmckitri/research/jgr07/M&M.JGRDec07.pdf.

[82] See "Variable solar irradiance as a plausible agent for multidecadal variations in the Arctic-wide surface air temperature record of the past 130 years", Willie W.-H. Soon, Harvard-Smithsonian Center for Astrophysics, Cambridge, Massachusetts, USA *J. Geophys. Res.* VOL. 32, L16712, doi:10.1029/2005GL023429 (2005); see also Friis-Christensen, E. and Lassen, K. 1991. Length of the solar cycle: An indicator of solar activity closely associated with climate. *Science* **254**: 698-700; Lassen, K. and Friis-Christensen, E. 2000. Reply to "Solar cycle lengths and climate: A reference revisited" by P.

folly to either rely on GCMs or pretend that regulating CO2 emissions from new U.S. motor vehicles will have a climatic impact.

Models also reveal how the IPCC and CCSP – and, therefore, EPA – demonstrably ignore the potential role of natural climate variability in the mild warming we saw since the end of the Little Ice Age, particularly the historically unremarkable warmings prior to World War II and for two decades beginning in the late 1970s. Further, the IPCC ignores the obviously significant role in climate change played by land use.[83]

About the models missing the (now-) allegedly significant contribution of "black carbon", again we note the Scientific Alliance, which writes:

> Given the certainty of so many scientists that they understand the drivers of climate change, and that carbon dioxide dominates, it is sobering to note that the last IPCC Assessment Report, published just two years ago, makes no mention of the significant effect of soot. Moving from certainty that all drivers were accounted for to suddenly finding a basic 18% error is not calculated to build confidence in the state of knowledge. But the effect of black carbon now seems to be generally acknowledged, as witnessed by the recent unprecedented agreement of both climate activists and sceptics in the US Senate to instruct the Environmental Protection Agency to make a study of options to reduce levels of soot entering the atmosphere.
>
> The problem is that, if climate modellers have completely left out a factor which appears to account for nearly one fifth of climate change, what else might they have overlooked or underestimated? The obvious answer is the role of the Sun, where most mainstream scientists dismiss the changes in total radiance as trivial in climate terms, while many sceptics insist that its effect is far more complex and significant than that. They also point to the well-established historical correlation

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Laut and J. Gundermann. *Journal of Geophysical Research* **105**: 27,493-27,495; Mann, M.E., Bradley, R.S. and Hughes, M.K. 1998. Global-scale temperature patterns and climate forcing over the past six centuries. *Nature* **392**: 779-787; Mann, M.E., Bradley, R.S. and Hughes, M.K. 1999. Northern Hemisphere temperatures during the past millennium: Inferences, uncertainties, and limitations. *J. Geophys. Res.* **26**: 759-762; Svensmark, H. 1998. Influence of cosmic rays on Earth's climate. *Physical Review Letters* **22**: 5027-5030; Svensmark, H. and Friis-Christensen, E. 1997. Variation of cosmic ray flux and global cloud coverage - A missing link in solar-climate relationships. *Journal of Atmospheric and Solar-Terrestrial Physics* **59**: 1225-1232. See also, "Solar wind warming up Earth", September 28, 2007, RIA Novosti, http://en.rian.ru/analysis/20070928/81541029.html; see also, Habibullo I. Abdussamatov, "About the long-term coordinated variations of the activity, radius, total irradiance of the Sun and the Earth's climate", *Multi-Wavelength Investigations of Solar Activity, Proceedings IAU Symposium No. 223, 2004*, International Astronomical Union DOI: 10.1017/S1743921304006775, http:/journals.cambridge.org/production/action/cjoGetFulltext?fulltextid=288609; see also, F. Boberg & H. Lundstedt, Solar Wind Variations Related to Fluctuations of the North Atlantic Oscillation, Geophys. Res. Lett., VOL. 29, NO. 15, 1718, 10.1029/2002GL014903, 2002: 2) D. R. Palamara and E. A. Bryant, Geomagnetic activity forcing of the Northern Annular Mode via the stratosphere, Annales Geophysicae (2004) 22: 725–731).

[83] As Roger Pielke Sr. writes on his Climate Science blog, "This important scientific conclusion has been essentially ignored in the IPCC and CCSP assessments. An overview of this issue was reported on, for example, in Pielke Sr., R.A., 2005: Land use and climate change. Science, 310, 1625-1626." http://climatesci.org/2008/11/03/which-is-it-trees-cool-or-heat-the-planet-studies-give-contradictory-results/

> between sun-spot numbers and weather patterns. Periods of low activity correlate with poor harvests and high food prices due to cooler weather in mid-latitudes. Since the Sun is now entering a period of extremely low activity, we can expect to see its influence on the weather over the next decade or so if a causative correlation is valid.[84]

Until answered these questions further affirm EPA's assessment is insufficiently supported for purposes of U.S. environmental and regulatory law.

This refusal to meaningfully consider alternate explanations – particularly those so obviously dominant throughout history such as the sun's influence – is unique to this particular manifestation of one discipline of science. Instead, IPCC and CCSP and therefore EPA rely on models that reject such evidence. That is what is historically remarkable in this discussion: Mankind is suddenly – or, rather we should say with more historical perspective, *again* – the only permissible explanation for climate change. It is impermissible for EPA to simply adopt this fetish without inquiry.

Further still and relevant to the putative EPA reliance upon GCMs further major regulatory GHG decisions, over that period that EPA states Man has assumed dominance over the climate, with dangerous results (the past 100 years, and particularly the most recent 50 years), *the opposite* of a purported "endangerment" EPA posits would occur under warming scenarios has actually occurred, almost universally: it is indisputable that wealth has drastically increased with undeniable attendant impacts on human health and the environment, crop yields have expanded on smaller footprints of land no less, disease, starvation, infant mortality, and a host of other human ills have been greatly alleviated; and finally of course temperatures are, of late, down.

It is also indisputable that misguided, poorly thought-out environmental restrictions have killed millions of people, mainly children, offering millions of more reasons to avoid basing such significant decisions on unverifiable models, or on assessments which grounded in same. So when EPA cites "climatic changes can have significant adverse effects on crop yields" (p. 90), and therefore on humans, it arbitrarily ignores the threat its own actions now pose, which any objective assessment of climatic, adaptive and regulatory histories reveals as far more certain.

Lastly, EPA continues to rely on modeled regional climate impacts, including from the IPCC. Yet it remains true that GCMs cannot credibly model at the continental scale let alone the regional or country levels. This is an admission against the notion of relying upon CCSP and IPCC assessment reports as EPA does. Therefore, EPA relies upon regional climate modeling which is simply insufficiently credible for that purpose given IQA requirements.

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[84] Scientific Alliance Newsletter, May 15, 2009, available at http://www.scientific-alliance.org/.

VI. EPA impermissibly hypothesizes and inconsistently treats the idea of possible other GHG reduction requirements

Following on the latter point, we note that EPA improperly, and inconsistently, treats the concept of other nations possibly imposing (and enforcing) significant GHG *reduction* requirements (meaning, not only of the sort the U.S. Congress is considering but, implicitly, for the first time the kind that *actually reduces emissions* as opposed to provides "offset" schemes ensuring no actual reductions occur).

EPA does this on occasion when seeking to advance the notion that some conceivable reduction in Man's contribution to the global GHG budget would be meaningful, e.g., by detectably impacting those threats EPA cites as endangering human health and the environment. This is not only arbitrarily fantastic but, pursuant to *inter alia* the Agency's own logic, inappropriate.

For example, the Administrator states it is "inappropriate" for her to consider "adaptation", or the demonstrated, even ongoing responses by people to an always-changing climate in her determination as to whether a changing climate poses a threat (though she does cite individual behavior to make her case that some may place themselves at greater risk (p. 83), even though the literature is clear that individual behaviors in the face of warming overwhelmingly reduce risk[85]).

We disagree with EPA's refusal on this matter, but the Agency makes its case, which then redounds to the detriment of its own larger case. That is, she implicitly justifies continuing the regulatory process through this Finding[86] in part on the grounds that other people might undertake certain activities; that is, that it is entirely possible that someday other agencies may impose their own restrictions (p. 49) and other countries (e.g., pp. 116, 117). The former is purely speculative and the latter strangely ignorant of real-world circumstances, though both are offered in recognition that there is nothing that EPA can do to detectably impact that which it claims poses the endangerment.

These flexible and self-serving standards are arbitrary. However, it is the epitome of arbitrariness for the Administrator to, as it suits her purpose, deem the actions of private actors as alternately irrelevant – when real and proven (adaptation) – and worthy of consideration – when, at best, purely speculative (other regulations might follow to add possible impact to what EPA might impose pursuant to an "endangerment" Finding). We note the irony of EPA closing this approach – of considering the prospect that, *who knows, some other countries swearing they will not impose such restrictions as the Finding triggers might impose such restrictions after being so moved by EPA's effort* – as "insert[ing] extra-statutory considerations into the endangerment analysis" (p. 50). While

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[85] See, e.g., Davis, R.E., Knappenberger, P.C., Novicoff, W.M., and P.J. Michaels, 2003. Decadal changes in summer mortality in the U. S. cities, *International Journal of Biometeorology*, 47, 166-175.

[86] "Under section 202(a), the Administrator is required to set 'standards applicable to the emission of any air pollutant' that the Administrator determines causes or contributes to air pollution that endangers." (p. 105). This statement also draws unflattering light on the Administrator's public attempt to dampen public concern over (attention to?) EPA's effort by claiming that it might not lead to regulation.

the Agency is at it, it might also insert some real-world analysis of the fantasy of large emitters China and India, among others, acting in this way.

So for these purposes we note that, e.g., a recent Electric Power Research Institute study projects that GHG emissions from China and other developing countries are growing so fast that – even if all emissions from industrialized countries such as the United States and those in Europe were reduced to zero today – global atmospheric GHG concentrations should move beyond 450 parts per million (ppm) by the year 2070 (up from around 380 ppm now). There is no indication this will change and, in fact, to date the only thing that "is proceeding faster than projected", as the rhetoric typically blows about climate change, is emissions (with, as we also note, climate being wildly unresponsive to what the models say it should do). EPA even tangentially assuming the prospect of other large emitters undertaking meaningful reductions to somehow possibly provide climatic meaning to a U.S. reduction is impermissibly speculative.

Hypothesized future interventions by others are particularly unlikely to address current and near-term emissions which EPA insists is all it is considering (e.g., p. 113). For example, it is a central plank of the Indian Congress Party's platform to bring electricity to the poor, who number in the hundreds of millions; further, spin to the contrary about China "greening", to mask the building of a new coal-fired power plant every week or so, it is unavoidable from their statements and actions to date that any actions will be token.

EPA cannot reasonably feign a lack of awareness of the discussions aimed at drawing these other countries into some emissions-reduction agreement "post-2012". In that context, these and other countries so loudly, so frequently and so publicly repeat their rejection of such policies that, for EPA to assume at any level and/or for any purpose that major developing economies will decrease emissions, as opposed to rapidly and appreciably increase them as all scenarios project, is impermissible speculation or wishful thinking that has no place in this context. To do so while not also considering the certain flight of our own industry in response, and their contribution to emissions, is clearly impermissible.

Such rationalizations are of course in recognition that nothing EPA could order up would change that which it claims endangers public health and welfare. Such prescriptions, however, quite clearly and with far more certainty would harm public health and the environment. Therefore, EPA's claim that it makes its Finding having "consid[ered] the full range of risks and impacts to public health and welfare" does not withstand scrutiny and appears to be, paraphrasing Justice Scalia's dissent in *Massachusetts v. EPA*, simply the desired outcome substituted for reasoned judgment.

VII. Other Problems with EPA's Finding

A. EPA relies on that which it cannot introduce in a federal court: GCM outputs fail the *Daubert* "sound science" test for reference or introduction, and as such are an impermissible basis for a Finding

We discuss in further detail, elsewhere, the impermissibility of EPA's reliance on GCMs, but here specifically note a glaring weakness of this reliance by EPA on these tools which have been proven wrong: their output is unlikely to be admitted in a federal court for reference or as evidence pursuant to the test for "sound science" established by the Supreme Court in *Daubert v. Merrell Dow Pharmaceuticals* (509 U.S. 579)(1993).

As such, we argue that GCM outputs and work premised on GCM outputs are also impermissible bases for EPA's Finding. **We incorporate by reference the analysis and references in Comments made by Drs. Patrick J. Michaels and Paul C. Knappenberger on the Second Public Review Draft of the *Unified Synthesis Product: Global Climate Change in the United States*.**

We note that the Court in *Massachusetts v. EPA* did rely heavily if indirectly on claims premised in GCMs. However, the issue of GCM credibility or utility was not challenged and did not come into play to bring the issue to the fore. This is not the equivalent of affirming GCMs. So, while the courts have considerable discretion, we argue that when that changes the argument that *it's all we've got* will not prevail. Here, we bring to EPA's attention in brief why that should be the case, and why it therefore should not now proceed in such reliance to the effective exclusion of recent and historic observations.

EPA relies heavily on the precautionary language in *Ethyl Corp*., though we must repeat that *Ethyl Corp.* does not allow the Agency to proceed on a "precautionary" basis without limit. Instead, there are restrictions particularly when the Agency is purporting to avoid hypothetical harm.[87] If EPA's hypothesis doesn't meet relevant standards for science, we argue, then it is exceeding its mandate.

Consider *Daubert* as applied to GCMs. In *Daubert* the Court determined that, when considering if scientific testimony should be admitted, it is not permissible to simply look at, e.g., preferred scientific literature (we compare that to the instant case in which EPA has eschewed the literature for filtered, non-peer-reviewed presentations of select literature). The Court ruled that other views count, in an opinion liberalizing what may be admissible in federal courts as "expert scientific testimony". This ensures that observation- and otherwise-based critiques of GCM performance will be admissible. Yet – in what EPA will surely see, if this is tested, as a paradox – the opinion also appears to have excluded the output of GCMs for reference, as insufficiently reliable.

The Court established a test for determining whether certain testimony's underlying reasoning or methodology is scientifically valid and therefore may be properly applied to the issue at hand. GCMs are prejudiced by all but one of the factors in this test – which test, we note, has recently been assailed by individuals notable for their activism in favor

[87] EPA makes noises about current weather and climatic phenomena being related to anthropogenic influence, though only speculates but does not establish that any such phenomena – which always are occurring or underway – are in fact the result of anthropogenic influence.

of regulating CO2, even some now placed in the present administration, in papers that seem to betray a concern that it would claim this very tool (GCMs) victim.[88]

As the majority in *Daubert* noted:

> The scientific project is advanced by broad and wide-ranging consideration of a multitude of hypotheses, for those that are incorrect will eventually be shown to be so, and that in itself is an advance. Conjectures that are probably wrong are of little use, however…

That is to say that, if tried, we suggest that GCM outputs would be found to be no more than conjecture, and in truth of no value in projecting future climate.

Before articulating its test for "sound science", the Court stated:

> Faced with a proffer of expert scientific testimony, then, the trial judge must determine at the outset, pursuant to [FRE] 104(a), whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue. This entails a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue. (citations omitted)

The Court then enumerated the inquiries which we believe doom GCMs as admissible in a federal court and, we therefore argue, as a permissible basis for final agency action under the Clean Air Act. We refer EPA to the totality of the Court's discussion of these factors, and believe that any reasonable examination of this precedent informs a conclusion that EPA improperly eschewed reliance on the observed climate response to increased CO2 concentrations in favor of speculative and now disproved GCMs.

The *Daubert* factors include whether the theory or technique in question can be (and has been) tested. Obviously, the sole method of validating GCMs is through observations, and observations year-to-year have disproved the GCMs for that task. Although touted by some as able to explain or "hindcast" scattered observed warming and cooling events from the past decades or even century, that is unfounded because it is not possible to investigate "natural" sources of climate change (e.g., decadal-time scale fluctuations in cloud cover), which must be done as part of any credible such process.

For GCM output to be admissible they have to assist the trier of fact to understand evidence (model outputs themselves not being "evidence", of course). GCMs have been

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[88] For example, Lisa Heinzerling, "Doubting *Daubert*", Brooklyn Journal of Law and Policy, Vol. XIV No. 1 (2006), which asserts that *Daubert's* famed test really is not the import of the opinion, which was instead the desire to liberalize that which is admissible, though even then the article expresses disdain that disfavored evidence will ultimately be admitted, telegraphing, and in apparent trepidation over, the likely outcome of putting GCMs on trial. In what must be a rare instance, the author adopts then-Chief Justice Rehnquist's dissenting view, instead.

devastated by a climate that does not operate as these fatally flawed tools would have it do so. To the extent a GCM output can be validated it is by observations, and observations instead prove the GCMs relied upon by EPA as wrong. We note that the *Daubert* majority emphasized validation as a key to evidence's or testimony's reliability.

As such, it is also highly suspect whether GCM output rises to the level of "scientific knowledge".[89] We admit that it is fully permissible to admit and debate the state of understanding of GCMs is admissible, which does not treat GCM outputs kindly.

A theory's error rate is also key under *Daubert*. As demonstrated in the chart, *supra*, IPCC models predict various warming rates over short, sub-periods of time. The minimal warming actually observed over the past two decades is *inconsistent* with at least 95% of the climate models' predictions. An error rate of nearing 100% dooms GCMs as "sound science" and exposes and overwhelms absurd IPCC claims of 90-95% certainty. That is an error rate that would doom any other scientific evidence, so is likely to do the same should GCMs be put to the test.

Daubert also suggests inquiry into whether the theory or technique has been subject to peer-review and publication (GCM *outputs* have of course been published). The idea behind this prong is that the process would identify flaws or weaknesses. Dogging GCMs, however, is what we have discovered about peer-review when it comes to how the process treats (*particular* conclusions in) the "climate" literature, which is damning.[90] The fatal flaw in the publication of climate models, however, is that the actual code is held closely by the authors such that peer-reviewers have not checked it and, with rare exception, the work is not actually replicable. That is the hallmark of sound science (see, e.g., IQA), which GCMs fail. As such, although GCM outputs *have* been published, that prong actually works to the detriment of admitting GCM output.

In the years since development of those GCMs used in the materials to which EPA outsources its judgment, even more advanced attempts, part of the product of hundreds of millions of dollars spent attempting to make models credible (as great an admission of their invalidity as one could find, outside of observations proving them wrong) meet responses like the following. "Dr Leonard Smith of the London School of Economics' Grantham Institute says he cannot see how any planner could make decisions on probable climate outcomes that are so uncertain that they might change substantially in 20 years. 'It's very hard to find a rational way of using them,' he said."[91]

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[89] "The adjective 'scientific' implies a grounding in the methods and procedures of science. Similarly, the word 'knowledge' connotes more than subjective belief or unsupported speculation. The term 'applies to any body of known facts or to any body of ideas inferred from such facts or accepted as truths on good grounds." *Daubert* citing Webster's Third New International Dictionary 1252 (1986), noting again here that "good grounds" implies "validation", a test the GCMs cannot satisfy.

[90] See, e.g., "Red Hot Lies: How global warming alarmists use threats, fraud and deception to keep you misinformed", Christopher C. Horner (Regnery Publishing, Washington, DC, 2008), esp. pp. 125-139.

[91] "Climate warnings' error margins," BBC News, June 18, 2009, http://news.bbc.co.uk/2/hi/science/nature/8106513.stm.

We continue to see the sole praise for these outputs distilling to *it's all we've got.* As detailed elsewhere in these Comments, *it's all we've got* (which is not true) is insufficient for purposes of U.S. laws relevant to the instant case.

The question of the existence and maintenance of standards controlling the models' operation reminds us that no such things exist in any credible fashion. GCM authors may use whatever assumptions they wish, and do so to the point of folly. As noted, the fashion is to build in "feedbacks" as are necessary to produce the required "hindcasting" outcomes. That's reverse engineering, not sound practice for developing a tool for projection.[92]

The final *Daubert* factor, whether the method has attracted widespread acceptance within a relevant scientific community, naturally supports the models. EPA touts this as a reason to rely on the IPCC (e.g., p. 47, if defensively attempting to deflect the obvious claim against them it the IPCC ARs are *not* "the most recent science"). This also, however, only reminds us again of the conclusions, cited above, of the Wegman Committee.

GCMs are indeed "generally accepted", in the absence of any other predictive tool – that is, other than GCMs adjusted to a more realistic CO2-sensitivity (they would remain fatally flawed, however, for their failure to properly consider major drivers such as the sun, oceans, clouds, etc.), or the tool of comparing past climate behavior, which has never been driven by GHG concentrations or specifically CO2 concentrations.

But GCMs being generally accepted is neither a precondition to admissibility – the same holding true for critiques of models, of course – nor does it credential them, as is clear from *Daubert*.

For these purposes and consistent with *Daubert's* spirit of liberalizing that which may be admitted, we will cede *arguendo* the relevance of GCM output, to focus scrutiny on whether they are *reliable*, which is the key inquiry here. It is this test that leads us to conclude that model outputs and experts testifying to these outputs – which in the instant case means to that upon which EPA has premised its Finding – are likely inadmissible.

As the Court concluded, "[t]he inquiry is a flexible one, and its focus must be solely on principles and methodology, not on the conclusions they generate." This explains why Justice Blackmun's opinion makes clear that "general acceptance" is the weakest of all factors, being rather more the product of non-scientific factors than scientific ones.

The Scientific Method involves observing a phenomenon carefully, developing a hypothesis that possibly explains the phenomenon, performing a test in an attempt to disprove or invalidate the hypothesis. If the hypothesis is disproven, return to steps 1 and 2. A hypothesis that stubbornly refuses to be invalidated may be correct. Science then calls for continued testing. This is demonstrably *not* how "science" has proceeded with

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[92] See, e.g., Dr. Roy Spencer "A Layman's Explanation of Why Global Warming Predictions by Climate Models are Wrong", as edited June 1, 2009, at http://www.drroyspencer.com/2009/05/a-layman's-explanation-of-why-global-warming-predictions-by-climate-models-are-wrong/.

the climate computer modeling, and the *Daubert* assessment strongly imlicates the issue of relevance and Federal Rule of Evidence 402.

B. EPA's Outside Sources are Conflict-Ridden, Self-Citing and Self-Affirming, and Therefore Impermissible Sources for Deference

As noted in our comments on EPA's ANPR which preceded this Finding, we challenge EPA's questionable practice of turning to a conflict-ridden group of authors, contributors or reviewers to produce the supporting TSD, and whose work continues to be a principal component of EPA's Finding, who indeed are also to some extent the same individuals to whom EPA has effectively and impermissibly outsourced its discretion. These authors' work in the TSD-Draft led EPA to ask whether it might simply rely on CCSP or IPCC, despite that these individuals with a demonstrated bias and, particularly, conflict with any such enterprise include, e.g., CCSP authors Anthony Janetos, Virginia Burkett, Jerry Hatfield, Thomas Karl, and Thomas Wilbanks. Much other overlap exists between these EPA TSD authors and CCSP, both its hierarchy and other assessments which EPA presumably also seeks to rely upon instead of peer-reviewed work.

We pointed out the problems inherent in this course. EPA remarkably continued to rely on may of these same individuals to produce the TSD, and even risibly hails it as some form of external review or quality control, so we renew our objections.

IPCC authors or contributors to whom EPA turned for a its own very small group of authors, contributors or reviewers for a document that now simply relies on, e.g., recent (2007) IPCC ARs include, at minimum, Susan Solomon, as co-chair of WGI one of the most senior IPCC figures and one of 52 authors of WGI upon which EPA now seeks to rely, as well as Gavin Schmidt, Tom Karl (both WGI), and Virginia Burkett, Anthony Janetos, Thomas Wilbanks (WGII). Finally, EPA authors, contributors or reviewers include those who are on record touting the IPCC, despite what has been exposed by the UK House of Lords Select Committee, scientists led by Dr. Fred Singer's NIPCC, John McLean and others (e.g., Benjamin DeAngelo).

CEI has already noted how authors of both the IPCC and CCSP assessment reports have been exposed as citing their own work – in the CCSP USP over 100 times and the IPCC serially, most notably (but hardly exclusively) in its "hockey stick" fiasco. The inclusion within EPA's team of participants with a conflict due to having participated in producing those assessments which EPA seeks to rely upon is undeniable, and EPA should under no scenario compound such behavior.

We note here, for example, CCSP lauding IPCC ARs and taking great credit for their own involvement in same. "Many of the authors of the IPCC are from the United States and many of those authors are entirely or partly funded by the CCSP. In addition, CCSP managed the U.S. nomination process, which resulted in 38 U.S. Federal, academic, and non-governmental organization experts serving in lead author and editorial roles for the WG1 volume. A leading NOAA atmospheric scientist, Dr. Susan Solomon, co-chaired

Working Group I, with the program providing funding to operate the Technical Support Unit based in Boulder, CO. The program also managed the Expert and Government Reviews. This ranged from a public call for comments, collection of comments, and assembly of expert panels to review comments for technical merit."[93]

That EPA's "endangerment" process was not a measured one is also manifested by inclusion as a reviewer, for example Gavin Schmidt, whose posts on www.RealClimate.org (a public-relations advocacy project of Environmental Media Services, itself in turn a project of the advocacy group Fenton Communications), reveal an alarmism that is goes to often bombastic and *ad hominem* lengths. EPA should not compound these oversights by relying *at any level or to any extent* on work authored in whole or in part by its advisors to date on the "endangerment" question.

Therefore, EPA has merely compounded its reliance on self-referencing authors and reviewers, compounding the freedom of its Finding from anything representing peer review in any legitimate sense of the term. EPA has impermissibly turned to IPCC and CCSP assessment reports in lieu of conducting its own assessment and in avoidance of seriously considering independent, peer reviewed work as the term traditionally connotes. EPA deferred to sources exposed as lacking objectivity, balance and other necessary attributes, in particular CCSP and IPCC ARs.

Further, we incorporate by reference the totality of our comments on EPA's Advance Notice of Proposed Rulemaking (ANPR), "Regulating Greenhouse Gases Under the Clean Air Act (CAA)," published in the *Federal Register* on July 30, 2008,[94] Particularly here we reaffirm our previous description of EPA statements which, upon scrutiny, raise serious questions about this enterprise's credibility, specifically the effort, and its purported origin in a 2003 OMB guidance (OMB Circular # 4 Sept. 17, 2003, issued as guidance to all agencies, Subject: Regulatory Analysis), to count possible international benefits from regulating CO2 or GHGs, for the obvious reason that to consider only domestic benefits would make plain the futility of seeking to alter the climate through GHG regulation.

VIII. Conclusion

For all of the reasons cited above, we object to EPA outsourcing its judgment, relying upon the impermissibly unreliable products of GCMs, ignoring applicable information quality and peer review requirements,[95] and other problems described herein which reveal that EPA should have accepted the Court's invitation in *Massachusetts v. EPA*, of

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[93] http://www.climatescience.gov/Library/pressreleases/pressrelease16feb2007.htm U.S. Climate Change Science Program Provides Key Contributions to IPCC Fourth Assessment. Press release (dated 16 February 2007) from the U.S. Climate Change Science Program. (posted 16 February 2007).

[94] EPA, Regulating Greenhouse Gas Emissions Under the Clean Air Act, Advanced Notice of Proposed Rulemaking, *Federal Register*, Vol. 3, No. 147, July 30, 2008. Hereafter cited as ANPR. CEI's comments to which this refers are available at http://www.regulations.gov/fdmspublic/component/main?main=DocumentDetail&o=09000064807c9caa.

[95] See e.g., EPA Science Policy Council Handbook: Peer Review 1998, Sec. 2.4.2.

choosing to not declare that Man-made GHGs pose an "endangerment". Instead, as we argue above, EPA's most responsible course is to seek specific direction from Congress as to whether and how to perform such an admittedly enormous and potentially severely disruptive task.

We note the inaccuracy of EPA insisting it "exercise[d] reasoned decision making, and avoid[ed] speculative or crystal ball inquiries." (pp. 26-27) This incredible stance makes light of the fact that the sources to which EPA outsourced its judgments, and the GCMs on which they rely, ignore observations that appear to disprove their theory or their outputs. *We recall here that the original petition from which EPA's Finding springs was made when temperatures appeared to be rising, if relatively slightly and aided by an El Nino, though still leaving the three-decade-plus cooling prior to the late 1970s as an inconvenient truth opposing its premise.*

With temperatures "plateauing" according to IPCC chief Rajendra Pachauri, and with recent cooling, we see there has actually been no warming since the "global warming" petition that spawned EPA's Finding. It has cooled since, yet EPA claims it relies in part on "observations" for its Finding.

It seems also fair to assume that, were temperatures more cooperative, EPA would not be so silent as to their behavior but would instead trumpet them as further supporting what we explain here does appear to be a "desired outcome", one that EPA struggles in its Finding to support. All of which exposes EPA's decision as somewhat lacking in foundation, and its claims of relying on observations and avoiding speculative or crystal ball inquiries as unsupportable. In short, EPA impermissibly overstates the warming influence of anthropogenic activities.

EPA instead has arbitrarily sought to force into the round hole of a CAA "endangerment" finding the square peg of regulating, at the margins, what a truly "global" assessment indicates is a climatically trivial or *de minimis* overall potential greenhouse forcing from U.S. tailpipe emissions, or section 202(a) sources, all of which represent a declining percentage global emissions and a slight fraction of total annual global GHG production from all sources. These are even more trivial climate factors still should EPA have considered, as it must, the major climate drivers of the sun, clouds and oceans. Again we note EPA's arbitrary approach to finding that U.S. GHG emissions are "significant", of only comparing them to the total anthropogenic GHG budget, and not the total GHG budget of which Man contributes a very small percentage (see *supra* pp. 9, 15).

For all of these reasons we argue that EPA's Finding is serially arbitrary and capricious.