

701 Pennsylvania Avenue, N.W.
Washington, D.C. 20004-2696
Telephone – 202-508-5027
Fax 202-508-5150
qshea@eei.org

www.eei.org



**EDISON ELECTRIC
INSTITUTE**

QUINLAN J. SHEA, III
Executive Director, Environment

May 24, 2010

Ted Boling, Esq.
Senior Counsel
Council on Environmental Quality
722 Jackson Place, NW
Washington, DC 20503

Submitted by e-mail to: gcc.guidance@ceq.eop.gov

Re: Draft CEQ NEPA Guidance on Consideration of Climate Change
and Greenhouse Gases, 75 Fed. Reg. 8046 (February 23, 2010)

Dear Mr. Boling:

The Edison Electric Institute is pleased to submit the attached comments to the Council on Environmental Quality on the above-referenced “Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions,” dated February 18, 2010.

EEI appreciates the opportunity to submit these comments. If you have any questions about them, or need additional information, please contact me, Edward Comer at (ecomer@eei.org; 202-508-5615), William Fang at (bfang@eei.org; 202-508-5617) or Henri Bartholomot at (hbartholomot@eei.org; 202- 508-5622).

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Quinlan J. Shea, III', written in a cursive style.

Quinlan Shea
Executive Director, Environment

QS:cfb
Attachment

**COMMENTS OF THE EDISON ELECTRIC INSTITUTE
ON THE COUNCIL ON ENVIRONMENTAL QUALITY'S
"DRAFT NEPA GUIDANCE ON CONSIDERATION OF THE EFFECTS OF
CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS"**

May 24, 2010

The Edison Electric Institute (EEI) is pleased to submit these comments to the Council on Environmental Quality (CEQ or Council) on its "Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions," dated February 18, 2010. CEQ announced that the guidance was available, and invited comments by May 24, 2010, in a notice published at *75 Fed. Reg.* 8046 (Feb. 23, 2010).

In that notice, CEQ specifically invited comments on "when and how Federal agencies must consider the impacts of proposed Federal actions on global climate change, as well as the expected environmental effects from climate change that may be relevant to the design of the proposed Federal action." EEI addresses both of these issues in our comments.

EEI is the association of shareholder-owned electric utilities in the U.S. Our members serve 95 percent of the ultimate customers in the shareholder-owned segment of the industry, and they represent approximately 70 percent of the nation's electric power industry. Much of the electricity required for homes and businesses is generated through means that produce carbon dioxide (CO₂), and utility operations may result in emissions of other greenhouse gases (GHGs). In addition, EEI members are affected directly as permittees, and indirectly through their reliance on federal agency resource decisions, by federal agency implementation of the National

Environmental Policy Act of 1969, 42 U.S.C. § 4321 *et seq.* (NEPA). Therefore, EEI has a direct interest in the draft guidance.

I. Overview

EEI is submitting these comments to CEQ because the power sector has a major interest in ensuring that environmental reviews of electric generation, transmission, and distribution projects and other such critical infrastructure – including fuel resources – are appropriate in nature, scope and content. We also seek to ensure that the environmental review process for such facilities is as streamlined and efficient as possible in order to avoid unnecessary delays and increased costs to power sector customers in obtaining necessary agency decisions as to the facilities.

EEI supports comprehensive, economy-wide climate change legislation. Comprehensive legislation is simply a better fit for addressing climate change than traditional environmental regulation under statutes such as the Clean Air Act (CAA), Clean Water Act, Endangered Species Act (ESA) and NEPA. Well-designed legislation can achieve significant GHG emissions reductions – for example, by promoting enhanced energy efficiency, lower GHG-emitting technology, renewable energy sources, advanced coal technologies coupled with carbon capture and storage (CCS), and other critical technologies and measures – while helping to maintain both the reliability and affordability of the nation’s electric energy supply.

We fully support the intent of NEPA to ensure that federal agencies consider significant environmental effects of their decisions on the human environment. At the same time, the NEPA

review process and decisions based on it need to be reasonable and timely in order to ensure the best use of limited federal agency, regulated community and public resources.

Agency reviews under NEPA already provide a comprehensive and sound review of proposed federal actions and their environmental impacts. Therefore, in order to avoid confusion, duplication, litigation and delay, CEQ guidance should be properly tailored to help to ensure consistency across federal agencies and reasonable, streamlined implementation of NEPA. To achieve these goals, guidance for considering climate change and GHGs in the NEPA context must be crafted with great care. GHG emissions are unlike traditional pollutants regulated under various environmental statutes because there is little (if any) relationship between GHG emissions from a project in a particular location and the possible environmental effects of climate change in that location. Instead, it is the total global accumulation of GHG emissions over a long period of time that matters. In addition, future climate conditions cannot be predicted or quantified with certainty at a global level, much less at a national, regional or local level. Furthermore, given the current state of general circulation models (GCMs), the science cannot definitively predict climate change effects resulting from GHG emissions at individual facilities at any level – national, regional or local. This makes the process of considering the effects of GHGs and climate change from individual project proposals inherently speculative. While CEQ has recognized this in part in the draft guidance, the final guidance should more fully reflect this basic reality in order to avoid encouraging federal agencies to spend time and funds on GHG and climate analyses that, in the end, would not meaningfully inform the agency decisions or even worse, could provide confusing or misleading information.

In addition, CEQ's guidance should reflect more clearly that CEQ's proposed reference level of 25,000 metric tons per year of CO₂ equivalent (CO₂e) does not constitute a basis for requiring more detailed environmental analysis of a particular activity. As we explain below, the 25,000-ton indicator was developed to collect emissions data, not as a regulatory benchmark. In fact, 25,000 tons represents only 5/100,000th of 1 percent (0.0000005) of the 49 billion tons of global GHG emissions in 2004. EPA's so-called "tailoring" rule, issued on May 13, 2010, will apply 75,000 and 100,000 tons per year as the minimum levels for triggering Prevention of Significant Deterioration (PSD) permits under the CAA. While it may be appropriate to report projected GHG emissions at such levels in an environmental impact statement (EIS) in order to inform the decision-maker and the public, even a 100,000-tons-per-year project will have an imperceptible impact upon climate, and therefore agencies should not be tasked with engaging in any further analysis that would be largely speculation.

While EEI appreciates CEQ's desire to provide guidance on how to consider climate change and GHGs in NEPA reviews, we encourage the Council to refine the proposed guidance to provide greater clarity and more reasonable recommendations on how to accomplish this. At most, the guidance should require agencies to include information about anticipated GHG emissions in environmental analyses of major projects. The guidance should not require agencies to engage in qualitative discussion of the impacts of such emissions upon climate because any such changes are far too speculative to predict. Nor should agencies be required to conduct detailed environmental analyses, including EISs, simply because of an activity's GHG emissions. Instead, publication of projected annual emissions levels should be sufficient under NEPA analysis.

II. Because There Is No Substantive Basis To Draw A Link Between A Particular Project's GHG Emissions And Climate Change, Discussion Of The Effects Of Such Emissions On Climate Change And Alternatives For Reducing Those Emissions Would Be Speculative And Unproductive.

In the draft guidance, CEQ correctly concedes that “it is not currently useful” to attempt to make a causal link between climate change, or the environmental impacts of such change, and a particular project or its emissions because “such direct linkage is difficult to isolate and to understand” (p. 3). CEQ also acknowledges the view of the Environmental Protection Agency (EPA) that it is not currently “possible to quantify with great specificity (i.e. geographic) the various health effects from climate change.”¹ *Id.* at 11. In addition, CEQ recognizes that the Supreme Court has stated that the obligation of an agency to discuss particular effects turns on “a reasonably close causal relationship between the environmental effect and the alleged cause.” *Id.* at 7, quoting *Dep’t of Transp. v. Public Citizen*, 541 U.S. 752, 767 (2004)).

Because there is no such demonstrable “causal relationship” between an individual activity’s GHG emissions and specific climate change impacts, there is no meaningful basis for requiring agencies to engage in a speculative discussion of such a link in the NEPA context. Yet the draft

¹ In the proceeding where EPA made endangerment findings under the CAA, the EPA Administrator said:

The Administrator recognizes that human-induced climate change has the potential to be far-reaching and multi-dimensional, and in light of existing knowledge, that not all risks and potential impacts can be quantified or characterized with uniform metrics. There is variety not only in the nature and potential magnitude of risks and impacts, but also in our ability to characterize, quantify and project such impacts into the future.

74 *Fed. Reg.* 66,496, 66,497 (2009) (emphasis added).

guidance says that it would be appropriate, in a federal agency’s analysis of an activity’s direct effects under NEPA, for the agency to quantify the activity’s GHG emissions, to discuss “qualitatively” the link between those emissions and climate change, and to consider measures to reduce the emissions, including consideration of reasonable alternatives. *Id.* at 3.

While EEI agrees that agencies can provide some reasonable estimates of GHG emissions anticipated from individual activities, we strongly disagree that agencies can or should be expected to discuss in their NEPA analyses the impact of an activity’s GHG emissions on climate change, or the impacts of climate change on the activity, because such discussions would be speculative and thus unproductive and unhelpful to agency decision-making.

A. Courts Agree that under NEPA, Agencies Need Not Analyze Effects Absent a Causal Link and Need Not Engage in Speculative Alternatives Analysis.

The courts have long applied a “rule of reason” to NEPA analysis, which holds that agencies are not required to engage in speculation or “crystal ball inquiry.” In *National Resources Defense Council, Inc. v. Morton*, 458 F.2d 827 (D.C. Cir. 1972), the court examined the need to consider reasonable alternatives in an EIS in the context of an oil and gas lease sale under the Outer Continental Shelf Lands Act and concluded:

[T]he requirement in NEPA of discussion as to reasonable alternatives does not require “crystal ball” inquiry. . . . The statute must be construed in the light of reason if it is not to demand what is, fairly speaking, not meaningfully possible, given the obvious, that the resources of energy and research — and time — available to meet the Nation’s needs are not infinite. . . . In the last analysis, the requirement as to alternatives is subject to a construction of reasonableness, and we say this with full awareness that this approach necessarily has both strengths and weaknesses.

458 F.2d at 837-38 (emphasis added). CEQ’s current regulations adopt these same principles.

40 C.F.R. §§ 1500.4(f)-(g), 1501.7 and 1508.25. The draft guidance states that “[a]gencies apply

the rule of reason” on the usefulness of information regarding the “proposal, its alternatives, and mitigations options” (p. 5). It also appropriately refers to *Public Citizen*, supra, where the

Supreme Court held:

[I]nherent in NEPA and its implementing regulations is a “rule of reason,” which ensures that agencies determine whether and to what extent to prepare an EIS based on the usefulness of any new potential information to the decisionmaking process. See *Marsh*, 490 U.S., at 373-374, 109 S.Ct. 1851. Where the preparation of an EIS would serve “no purpose” in light of NEPA’s regulatory scheme as a whole, no rule of reason worthy of that title would require an agency to prepare an EIS. See *Aberdeen & Rockfish R. Co. v. Students Challenging Regulatory Agency Procedures (SCRAP)*, 422 U.S. 289, 325, 95 S.Ct. 2336, 45 L.Ed.2d 191 (1975); see also 40 CFR §§ 1500.1(b)-(c) (2003).

541 U.S. at 767-68.

Federal agencies should not be encouraged to engage in “qualitative” analysis of the effects of GHG emissions or alternatives for reducing GHGs if that would require a “crystal ball inquiry.”

The “rule of reason” must apply when effects from an individual project proposal cannot be readily ascertained and the value (if any) of the alternatives is remote and speculative.

B. There Is No Demonstrable Causal Link between an Activity’s GHG Emissions and Climate Change, and Alternatives Analysis in this Context is Inherently Speculative.

The draft guidance accurately states that “it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions, as such direct linkage is difficult to isolate and understand” (p. 3).

This position is consistent with the positions taken by other federal agencies.

In a May 14, 2008, memorandum, the Department of the Interior (DOI) stated, “It is currently beyond the scope of existing science to identify a specific source of CO₂ emissions and designate

it as the cause of specific climate impacts at an exact location.” Mark D. Myers, Director, U.S. Geological Survey re: “The Challenges of Linking Carbon Emissions, Atmospheric Greenhouse Gas Concentrations, Global Warming, and Consequential Impacts” (emphasis added).

Subsequently, in an October 3, 2008, letter to the Director of the U.S. Fish and Wildlife Service and the Director of the Office of Protected Resources, National Marine Fisheries Service regarding the “Endangered Species Act and GHG Emitting Activities,” EPA cited the DOI memorandum and agreed that current scientific analysis lacked the “tools” to make the “linkage” referred to by CEQ. EPA’s Principal Deputy Assistant Administrator, Office of Air and Radiation stated:

To date, research on how emissions of CO₂ and other GHGs influence global climate change and associated effects has focused on the overall impact of emissions from aggregate regional or global sources. This is primarily because GHG emissions from single sources are small relative to aggregate emissions, and GHGs, once emitted from a given source, become well mixed in the global atmosphere and have a long atmospheric lifetime. The climate change research community has not yet developed tools specifically intended for evaluating or quantifying end-point impacts attributable to the emissions of GHGs from a single source, and we are not aware of any scientific literature to draw from regarding the climate effects of individual, facility-level GHG emissions.

p. 4 (emphasis added).

In short, until the science of GCMs improves, no one will be able to model with any certainty or reliably predict the effects of a particular project’s GHG emissions on climate change. In recognition of the fact that such modeling would be an exercise in sheer speculation, the Obama Administration is initiating an almost \$50-million, five-year research effort by the National Science Foundation and the Agriculture and Energy Departments “aimed at producing new, high-resolution computer models” with the goals of producing “reliable predictions of climate

change at regional decadal scales, the resulting impacts, and the potential adaptation of living systems to these impacts.”²

Climate change is a global phenomenon caused by cumulative global GHG emissions over long periods of time, and is not a national, regional or local phenomenon linked to individual project emissions.³ Thus, the draft guidance calls climate change a “global problem that results from global GHG emissions,” while appropriately noting that “there are more sources and actions emitting GHGs (in terms of both absolute numbers and types) than are typically encountered when evaluating the emissions of other pollutants” (p. 2). Indeed, the Economic Report of the President to Congress (February 2010) observes, “Developing countries such as China and India are responsible for a growing proportion of emissions because of their heavy reliance on carbon-intensive fuels, such as coal . . .” (p. 255).

Both the Administration and Congress have recognized that addressing climate change will require concerted action globally, through international treaties and national actions, including enactment of economy-wide congressional legislation in the U.S., that together address the matter comprehensively and effectively. Furthermore, there are no GHG “hot spots,” such as occurs with some traditional air pollutants. GHG emissions do not have localized effects. For

² Energy Daily (March 25, 2010).

³ The Energy Information Administration’s (EIA) International Energy Outlook 2009, Chapter 8, titled “Energy-Related Carbon Dioxide Emissions,” states, “Because anthropogenic emissions of carbon dioxide result primarily from the combustion of fossil fuels, world energy use continues to be at the center of the climate debate” (p. 109).

these reasons, EPA has not targeted GHG emissions for regulation under the CAA in any regulation aimed at improving air quality in specific localities, states or regions of the U.S.

Quantitatively, the draft guidance states that this “problem is much more the result of numerous and varied sources, each of which might seem to make a relatively small addition to global atmospheric GHG concentrations” (p. 2). While the draft guidance briefly recognizes the global context of GHG emissions and climate change, CEQ appears to be attempting to mitigate the impacts of climate change at a local project level under a statute that is ill-suited to address the global nature of GHG emissions. This is precisely why Congress is attempting to legislate an appropriate response to the issue rather than leaving it to EPA under the CAA to regulate GHG emissions in inappropriate, costly and awkward ways.

Furthermore, the nature of climate change raises the problem of “leakage.” If NEPA analysis of GHG emissions and climate change should stall or stop any specific project, this could in many cases simply shift the emissions overseas, perhaps even increasing net global emissions.⁴ The energy-related CO₂ emissions of non-Organization of Economic Cooperation and Development (OECD) nations surpassed the CO₂ emissions of OECD countries in 2006, and by 2030 non-

⁴ In its April 28, 2010, report to Congress titled EPA Regulation of Greenhouse Gases: Congressional Responses and Options, the Congressional Research Service concluded:

The differences are of scale and of degree. Greenhouse gases are global pollutants to a greater extent than most of the pollutants previously regulated under the [Clean Air] Act; reductions in U.S. emissions without simultaneous reductions by other countries may somewhat diminish but will not solve the problems the emissions cause.

pp. 12-13 (footnote omitted and emphasis added).

OECD emissions are projected to be 73 percent greater than those of OECD nations.⁵ Since the already minuscule contribution of any specific federal project's GHG emissions to cumulative global emissions will only become smaller and smaller in the future, it would counterproductive to shift those emissions overseas.

C. 25,000 Metric Tons Per Year Should Not Be a Trigger for Quantitative Analysis.

The draft guidance chooses as a trigger 25,000 metric tons or more of CO₂e GHG emissions and indicates that “if a proposed action would be reasonably anticipated to cause direct emissions” in that quantity annually, “agencies should consider this as an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public” (p. 1) (emphasis added). The draft guidance adds that in the case of “long-term actions that have annual direct emissions of less than” such quantity, CEQ “encourages” the agencies “to consider whether the action’s long-term emissions should receive similar analysis.” *Id.* at 1-2.

The draft guidance then states that CEQ is “not” proposing this metric “as an indicator of a threshold of significant effects, but rather as an indicator of a minimum level” of emissions “that may warrant some description in the appropriate NEPA analysis” of agency actions “involving direct” GHG emissions. *Id.* at 2. The draft guidance also notes that this number now “serves as a minimum standard for reporting emissions” that has been recently promulgated by EPA.⁶ *Id.* at 3. The draft guidance contends that the 25,000-metric-tons figure “may provide a useful, presumptive, threshold for discussion and disclosure of GHG emissions because it has been used

⁵ See EIA, *supra* n. 3, at 6 (Fig. 9), 109 (Fig. 80).

⁶ We disagree with CEQ’s characterization of the EPA reporting rules as being issued under the CAA. In fact the initial reporting rule was issued under the Omnibus Appropriations Act of FY08.

and proposed” by EPA and “because it provides comprehensive coverage of emissions . . . , thereby creating an important data set useful in quantitative analyses of GHG policies, programs and regulations” and, as such, this “rationale is pertinent to the presentation of NEPA analysis as well.” *Id.* at 3 n. 2.

While it is reasonable for CEQ to attempt to provide a benchmark level above which agencies should examine GHG emissions from a proposed activity in undertaking NEPA analyses, we are concerned that – notwithstanding CEQ comments in the draft guidance to the contrary – agencies would improperly treat this low level of emissions as a “significant effect” threshold for NEPA purposes.

First, CEQ has failed to provide any scientific justification for the 25,000-ton indicator. If science is truly to be the foundation for the Administration’s environmental policy, there should be a principled rationale for such a number.

Second, an individual project’s GHG emissions – even for projects with relatively large emissions – will be infinitesimal compared to worldwide GHG emissions, and more importantly the individual project’s emissions will not have a demonstrable effect on climate change. This is clearly true for projects emitting 25,000 tons of GHG emissions annually. The draft guidance states that as of 2004, “human activities annually produced more than 49 billion tons of GHG measured” in CO₂e.⁷ Thus, a source in the U.S. – or anywhere in the world – emitting 25,000

⁷ Intergovernmental Panel on Climate Change (IPCC), Fourth Assessment Report (2007).

metric tons of CO₂e annually represents only a mere 5/100,000th of 1 percent of the 49 billion metric tons of GHGs emitted globally. Even in the context of U.S. GHG emissions, which have been estimated to be about 7.2 billion tons annually, 25,000 tons would be less than 4/10,000th of 1 percent.

EPA's use of the 25,000-ton-per-year level is for a distinct purpose under entirely different legislation. According to the preamble of EPA's reporting rule, EPA adopted this level as a threshold for mandatory reporting by "owners and operators of certain fossil fuel facilities that directly emit" 25,000 metric tons of CO₂e or more per year, as determined by monitoring, reporting, and recordkeeping, as well as from "certain fossil fuel suppliers and industrial GHG suppliers" that are "located in the United States." See 40 C.F.R. §§ 98.1 and 3 as added by the rule.⁸

EPA chose a facility-level "approach because the purpose of the reporting rule is to collect data from suppliers and from facilities with direct GHG emissions above selected thresholds for use in analyzing, developing and implementing potential future . . . GHG policies and programs." None of these is a NEPA requirement, and none relates to the environmental impacts of the GHG emissions or the need to study such impacts.

⁸ On April 12, 2010, EPA proposed a "supplemental rule to require reporting" of GHGs from petroleum and natural gas suppliers and proposed the same threshold, although EPA "considered" but rejected lowering it to 10,000 metric tons of CO₂e. See *75 Fed. Reg.* 18,608, 18,619.

Moreover, EPA recently issued the “tailoring rule,” which identifies initial levels of emissions to which certain PSD permitting provisions will apply. The GHG emissions thresholds will be 75,000 tons per year for modified sources and 100,000 tons per year for new sources between July 2011 and June 2013. See *Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule*, Docket No. EPA-HQ-OAR-2009-0517 (signed May 13, 2010), pp. 52-53.

Furthermore, as discussed previously, GHG emissions are well-mixed globally and are ubiquitous. GHGs have no local impacts or “hot spots.” The global location of a project is irrelevant, whether in the U.S. or overseas. A qualitative NEPA analysis of a U.S. project would either ignore the GHG emissions from similar projects overseas or, as previously mentioned, could shift GHG emissions overseas. CEQ’s draft guidance does not properly reflect the global context of the GHG issue.

Given that annual emissions of 25,000 metric tons do not rise to the level of a discernible effect, we encourage CEQ to reconsider its recommendation for agencies to identify individual activity GHG emissions in undertaking NEPA analyses. If CEQ does retain such a recommendation, CEQ should emphasize that the purpose of identifying the emissions is simply to provide information on the nature of the proposed activity, not to point to any indicator of environmental effect.

D. CEQ Should Not Call for Speculative or Duplicative Analysis of Indirect Climate Effects.

CEQ’s NEPA regulations define “effects” to include both “direct” and “indirect” effects and, as to the latter, explain that they “are caused by the action and are later in time or farther removed

in distance, but are still reasonably foreseeable.” 40 C.F.R. § 1508.8(b). In the draft guidance, CEQ indicates that agencies must analyze indirect effects of climate change. CEQ states that it “does not propose” its 25,000-metric-ton “reference point for use as a measure of indirect effects” (p. 3). We agree with that decision. However, the Council does not indicate whether, how and under what circumstances agencies should consider indirect effects.

EEI encourages CEQ to clarify that agencies should not consider indirect effects that are speculative or unfounded. Thus, for example, if an agency is examining the environmental effects of a proposed electric transmission line intended to relieve general congestion on the grid, the agency should not be required to examine potential changes in GHG emissions from the wide array of generation facilities that may produce electricity that may be transported on that line. Transmission lines are single elements in a highly integrated grid that supports the delivery of electricity from generation sources to customers, and unless a line were specifically dedicated to serve particular new generating plants – a relatively rare occurrence given the interconnected nature of the grid – it would be purely speculative to guess what generation sources may produce electricity over a particular line now and into the future, much less to speculate on the GHG emissions that would be involved.

The extent to which a given generation facility is used to generate electricity at a given time of day depends more on fluctuations in demand for electricity driven by factors such as weather and fuel prices, than on the presence or absence of a single transmission line. Moreover, the mix of generation facilities evolves over time as a result of a complex array of factors, including air, water, coal ash and other environmental regulations. Similarly, the extent to which electricity

from different generation facilities may be transported over a given line is driven more by grid physics and bulk power contracts than the mere presence or absence of a single line. To require agencies to guess how a particular line might change GHG emissions would be to require them to engage in speculation that is inappropriate and would not provide meaningful information to assist them with their decisions.

In this regard, we note *Mayo Foundation v. Surface Transp. Bd.*, 472 F.3d 545 (8th Cir. 2006). Petitioner Sierra Club contended that the increased use of Powder River Basin (PRB) coal due to a new rail line would increase air-polluting emissions and that the Board did not adequately address this issue. The court had found in an earlier decision that the final EIS was “inadequate because it did not include information on the potential increase in emissions of other pollutants – specifically . . . carbon dioxide . . .” and noted that computer “programs could be used to forecast the effects of this project on the consumption of coal.” *Mid States Coalition for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 548-50 (8th Cir. 2003).

On remand, the Board did examine potential impacts of the new line on air emissions and concluded that they were speculative and unpredictable. On subsequent review, the court noted that the Board had relied on EIA’s National Energy Modeling System (NEMS) after considering several other models because NEMS “not only forecasts coal supply and demand but also quantifies environmental impacts.” *Id.* at 555. Upholding the Board’s review, the court said:

After noting that “the impacts of this project on coal consumption and resulting air emissions would be small” on a national and regional basis and that any potential local air quality impacts were “speculative” and “ultimately unforeseeable,” the Board concluded that it was not necessary to impose additional mitigating conditions on the project.

Id at 555-56 (citations omitted). *See also Methow Valley Citizens Council v. Regional Forester*, 833 F.2d 810, 816 -817 (9th Cir.1987), *rev'd on other grounds, Robertson v. Methow Valley Citizens Council*, 490 U.S. 332 (1989) (the government is not required to speculate on impacts in order to “foresee the unforeseeable,” *citing City of Davis v. Coleman*, 521 F.2d 661, 676 (9th Cir.1975)).

EEI also encourages CEQ to clarify that agencies should not reconsider indirect effects that already have been analyzed or addressed in prior proceedings or are being analyzed or addressed in separate proceedings. Thus, for example, if GHG emissions from a given facility already are regulated or have been analyzed in permitting the facilities, agencies should not be required to reexamine those emissions as indirect effects of other facilities. CEQ’s regulations at 40 C.F.R. § 1502.20 encourage agencies to tier off of prior environmental analyses rather than redoing those analyses. Accordingly, CEQ should not require reconsideration, as indirect effects, of GHG emissions already taken into account directly in regulating or permitting the facilities producing those emissions.

III. Analysis Of Climate Change Effects on Proposed Major Federal Actions Also Is Highly Speculative And Should Necessarily Be Circumscribed.

The draft guidance proposes that federal agencies “should determine which climate change impacts warrant consideration in their EAs [environmental assessments] and EISs because of their impact on the analysis of the environmental effects of a proposed agency action” (p. 6). Citing the NEPA regulations (40 C.F.R. §§ 1500.4(g) and 1501.7) and CEQ’s 1981 Scoping Guidance process, the draft guidance states that agencies will “determine whether climate change

considerations warrant emphasis or de-emphasis” and when scoping the impact of climate change, “the sensitivity, location, and timeframe of a proposed action will determine the degree to which consideration of these predictions or projections is warranted.”⁹ *Id.* The draft guidance adds:

As with analysis of any other present or future environment or resource condition, the observed and projected effects of climate change that warrant consideration are most appropriately described as part of the current and future state of the proposed action’s “affected environment.” 40 CFR 1502.15. Based on that description of climate change effects that warrant consideration, the agency may assess the extent that the effects of the proposal for agency action or its alternatives will add to, modify, or mitigate those effects. Such effects may include, but are not limited to, effects on the environment, on public health and safety, and on vulnerable populations who are more likely to be adversely affected by climate change. The final analysis documents an agency assessment of the effects of the actions considered, including alternatives, on the affected environment.

Id.

⁹ It is unclear what the words “these predictions or projections” mean. Neither is defined nor explained in the draft guidance. However, Working Group I of the IPCC Summary for Policymakers distinguishes between the terms in its Annex I Glossary, saying that:

a projection is a potential future evolution of a quantity or set of quantities, often computed with the aid of a model. Projections are distinguished from *predictions* in order to emphasize that projections involved assumptions concerning, for example, future socio-economic technological developments that may or may not be realized, and are therefore subject to substantial *uncertainty*.”

The IPCC also defines and discusses the term “predictability” as follows:

Predictability. The extent to which future states of a system may be predicted based on knowledge of current and past states of the system. ... Since knowledge of the *climate system*’s past and current status is generally imperfect, as are the models that utilise this knowledge to produce a *climate prediction*, and since the climate system is inherently *nonlinear* and *chaotic*, predictability of the climate system is inherently limited. Even with arbitrarily accurate models and observations, there may still be limits to the predictability of such a nonlinear system.

pp. 138-39 (second emphasis added, italics in original and reference omitted).

As the draft guidance points out, such analysis would be most fruitful for projects “designed for long-term utility and located in areas that are considered vulnerable to specific effects of climate change (such as increasing sea level or ecological change) within the project’s lifetime.” *Id.* at 7. Accordingly, agencies should have considerable discretion to determine how they choose to plan for possible external impacts on their activities, including economic, social and environmental issues.

As to federal agencies applying climate change modeling in performing their NEPA analysis, the draft guidance suggests, citing Synthesis and Assessment Product (SAP) 3.1 on “Climate Models: An Assessment of Strengths and Limitations” and 40 C.F.R. §§ 1502.21-502.22, that such modeling is acceptable so long as the federal agencies “consider the uncertainties with long-term projections” from such global and regional models and “disclose . . . the extent to which they rely on particular studies or projections” because “[t]here are limitations and variability in the capacity” of those models “to reliably project potential changes at the regional, local, or project level” (p. 8) (emphasis added). This brief dissertation on the use and reliability of modeling ends by noting: “The outputs of coarse-resolution global climate models, commonly used to project climate change scenarios at a continental or regional scale, require downscaling and bias removal . . . before they can be used in regional or local impact studies.” *Id.* (emphasis added).

Accordingly, with all these caveats and no apparent resolution offered on how to overcome the shortcomings and “limitations,” CEQ first should assess whether use and reliance on such modeling by federal agencies would be practicable and not lead to claims of speculation.

Second, CEQ should dissuade agencies from applying these models unless and until they have the resources and expertise to overcome these limitations within an acceptable level of certainty.

With regard to GCM's, the aforementioned Global Climate Change Impacts in the United States report states, "All of the models used in this work have imperfections in their representation of the complexities of the 'real world' climate system . . . due to both limits in our understanding of the climate system, and in our ability to represent its complex behavior with available computer resources" (p. 22). Nevertheless, the report contends that "[d]espite this, models are extremely useful" and "are the only tools that exist for trying to understand the climate changes likely to be experienced over the course of this century." While such models may be useful in certain situations, the fact remains that they have limitations, particularly as they attempt to predict impacts regionally (*i.e.*, at the continental and sub-continental levels) and locally.

Indeed, the IPCC's Working Group I report, "The Science Basis," in the Third Assessment Report (2001) discussed some of those "limitations" in section 10.2.3 with respect to Regional Climate Models (RCMs), saying that this "modeling technique consists of initial conditions, time-dependent lateral meteorological conditions and surface boundary conditions to drive high-resolution RCMs," with the "driving data . . . derived from GCMs (or analyses of observations and can include GHG aerosol forcing." However, the section adds that "[t]he main limitations of this technique are the effects of systemic errors in the driving fields provided by global models; and lack of two-way interactions between regional and global climate . . ." In addition, the "RCM simulations can be computationally demanding, which has limited the length of many experiments to date."

One potential approach to regional climate projection is “statistical downscaling,” a practice that does little to foster confidence. As discussed in the Working Group I report:

The major theoretical weakness of statistical downscaling methods is that their basic assumption is not verifiable, i.e., that the statistical relationships developed for present day climate also hold under the different forcing conditions of possible future climates. In addition, data with which to develop relationships may not be readily available in remote regions or regions with complex topography. Another caveat is that these empirically-based techniques cannot account for possible systematic changes in regional forcing conditions or feedback processes. The possibility of tailoring the statistical model to the requested regional or local information is a distinct advantage. However, it has the drawback that a systematic assessment of the uncertainty of this type of technique, as well as a comparison with other techniques, is difficult and may need to be carried out on a case-by-case basis.

p. 31, section 10.2.4 (emphasis added).

In the case of the IPCC’s Fourth Assessment Report, the Technical Summary also addresses

“Regional Downscaling.” Working Group I’s Summary for Policymakers states:

The availability of downscaling and other regionally focused studies remains uneven geographically, causing unevenness in the assessments that can be provided, particularly for extreme weather events. Downscaling studies demonstrate that local precipitation changes can vary significantly from those expected from the large-scale hydrological response pattern, particularly in areas of complex topography.

There remain a number of important sources of uncertainty limiting the ability to project regional climate change. While hydrological responses are relatively robust in certain core subpolar and subtropical regions, there is uncertainty in the precise location of these boundaries between increasing and decreasing precipitation. There are some important climate processes that have a significant effect on regional climate, but for which the climate change response is still poorly known. These include ENSO, the NAO, blocking, the thermohaline circulation and changes in tropical cyclone distribution. For those regions that have strong topographical controls on their climatic patterns, there is often insufficient climate change information at the fine spatial resolution of the topography. In some regions there has been only very limited research on extreme weather events. Further, the projected climate change signal becomes comparable to larger internal variability at smaller spatial and temporal scales, making it more difficult to utilise recent trends to evaluate model performance.

p. 74, Box TS.10 (references omitted and emphasis in original).

An April 8, 2004, article in Nature, titled “Modelers Deplore ‘Short-Termism’ On Climate,” reported on a meeting of regional climate modelers in Lind, Sweden: “Projections of climate change in say Florida or the Alps carry more political weight than vague warnings about global warming. And for almost two decades, the specialists in regional assessment have sought to make such projections,” but, according to the article, the modelers acknowledged that “their success has been limited.”

In the previously noted October 3, 2008, letter to U.S. fishery agencies, EPA also focused on the limitations:

The current tools for simulating climate change generally focus on global and regional-scale modeling. Global and regional-scale models lack the capability to represent explicitly many important small-scale processes. As a result, confidence in regional- and sub-regional-scale projections is lower than at the global scale. There is thus limited scientific capability in assessing, detecting, or measuring the relationship between emissions of GHGs such as CO₂ from a specific single source and any localized impact on a listed species, its habitat, or its members for purposes of ESA considerations.

p. 4 (emphasis added).

In addition, a May 2008 report of the Committee on Environment and Natural Resources of the National Science and Technology Council, titled “Scientific Assessment of the Effects of Global Change on the United States,” included a section on “Attribution of Observed Climate Change to Human Activities at the Global and Continental Scale.” That section “addresses the extent to

which observed climate changes at the global and continental or national scale can be attributed to global anthropogenic emissions of greenhouse gases.” It states:

Difficulties remain in attributing temperature changes at smaller than continental scales and over time scales of less than 50 years. Attribution results at these scales have, with limited exceptions, not been established. Averaging over smaller regions reduces the natural variability less than does averaging over large regions, making it more difficult to distinguish between changes expected from external forcing and variability. In addition, temperature changes associated with some modes of variability are poorly simulated by models in some regions and seasons. Furthermore, the small-scale details of external forcing and the response simulated by models are less credible than large-scale features (IPCC, 2007a).

p. 70.

Until high-resolution computer models can predict with some degree of certainty future impacts of GHG emissions, CEQ should not require federal agencies to engage in such speculative exercises. **While it is appropriate for the draft guidance to refer to uncertainty and the limitations of regional modeling, the requirements of “downscaling and bias removal” for GCMs, and the need for agencies, in considering utilizing such modeling in their NEPA analysis, to disclose limitations, we question, in light of the above discussion, why agencies should undergo the burden and expenditure of resources of even considering such regional or local applications.**

In short, in light of their uncertainties and limitations, use of GCMs for regional and local NEPA analyses would be too speculative and unproductive, probably for some time to come, and we question CEQ’s inclusion of them in the draft guidance.

IV. Conclusion

In summary, EEI encourages CEQ to revisit in some fundamental ways the proposed guidance for consideration of GHGs and climate change in the NEPA context. While we agree that it often will be possible for federal agencies to estimate the anticipated GHG emissions of their proposed activities, CEQ needs to ensure that agencies in no way equate individual project GHG emissions, at or above 25,000 tons per year, as a “significant effect” warranting preparation of an EIS.

When compared with nationwide or global GHG emissions, 25,000 tons per year is too low a threshold to be meaningful for purposes of NEPA analysis. Indeed, the most helpful thing CEQ can and should do in its guidance on GHGs and climate change is to indicate that individual project GHG emissions typically will be minuscule compared to global emissions and so do not need to be studied in any qualitative way or substantial detail in the NEPA context.

Given the lack of any way to measure a causal link between individual project GHG emissions and specific climate change impacts, CEQ should ensure that the guidance does not require NEPA analyses to discuss the effect of an activity’s emissions on climate change, either quantitatively or qualitatively. Instead, the guidance should be limited to requiring publication of the activity’s projected annual emissions levels.

Finally, we question the ability of federal agencies to examine in a meaningful way the impact of climate change on a proposed activity – given that climate change modeling is fraught with

uncertainty, in particular when trying to ascertain climate change at a regional or local level – or with any degree of accuracy into the future. At most, agencies should be encouraged to

1) periodically check the evolution of climate change models and assess whether, in the future, these models have become sufficiently advanced so as to produce sound and robust regional and local estimates of specific environmental effects that may be useful to federal decision-makers, and 2) perhaps now only undertake a very simple and modest “scenario” analysis of potential impacts of climate change on their activity, to the extent that can be hypothesized, to see what aspects of the activity may need to be monitored as climate science evolves.