



November 22, 2021

Docket ID No. CEQ–2021–0002. National Environmental Policy Act Implementing Regulations Revisions. Notice of Proposed Rulemaking

Comments of the Competitive Enterprise Institute (CEI)

Thank you for the opportunity to comment on the Council on Environmental Quality’s (CEQ) proposal to modify certain aspects of its regulations implementing the National Environmental Policy Act (NEPA).¹ CEI’s comments focus on CEQ’s proposed revisions to its July 2020 implementing regulations² defining “environmental effects.” Specifically,³ CEQ proposes to:

- Remove language defining “effects” as impacts “that are reasonably foreseeable and have a reasonably close causal relationship” to agency actions.
- Remove language stating that a “but for” causal relationship is insufficient to make an agency responsible for a particular effect under NEPA.
- Remove language which states that agencies generally should not consider effects that are remote in time, geographically remote, or the product of a lengthy causal chain; and should not consider effects the agency has no ability to prevent due to its limited statutory authority.
- Restore the terms “direct,” “indirect,” and “cumulative” to the definition of “effects” agencies must consider.

CEI advises CEQ not to revise the 2020 Rule’s language on “effects.” CEQ’s proposed changes will increase the political pressure on permitting agencies to approve or reject infrastructure projects based on their greenhouse gas (GHG) emissions. NEPA was never designed to be a climate policy framework, and Congress did not subsequently revise the statute to make it so.

NEPA is centrally concerned with major agency actions that “significantly affect [] the quality of the human environment.”⁴ Even the GHG emissions of the largest projects have no discernible, traceable, or verifiable impacts on the quality of the human environment.

¹ Council on Environmental Quality (CEQ), National Environmental Policy Act Implementing Regulations Revisions; Notice of Proposed Rulemaking, 86 FR 55757-55769, October 7, 2021, <https://www.regulations.gov/document/CEQ-2021-0002-0002>.

² CEQ, Update to the Regulations Implementing the National Environmental Policy Act, 85 FR 43330, July 16, 2020, <https://www.govinfo.gov/content/pkg/FR-2020-07-16/pdf/2020-15179.pdf>.

³ 86 FR 55762-55764.

⁴ 42 U.S. Code § 4332(C), <https://www.law.cornell.edu/uscode/text/42/4332>.

Encouraging agencies and stakeholders to fret over projects' unknowable climate change effects will only serve to confuse the public, feed the hubris of those who believe government exists to bankrupt companies they don't like, and mobilize opposition to beneficial economic development.

This comment letter has three main parts. Part I explains why NEPA is not a climate policy framework, and how the 2020 Rule's "effects" definitions encourage permitting agencies to maintain a degree of balance and independence in a politically charged environment. Part II applies the analysis in Part I to specific claims in CEQ's October 2021 proposed rule. Part III states our conclusions.

Part I: NEPA Is Not a Climate Policy Framework

The theory of anthropogenic global warming holds that cumulative global GHG emissions over decades to centuries will have climate change effects. It does not postulate that incremental emissions from individual sources have identifiable climate impacts. Incremental emissions attributable to specific projects are nowhere near large enough to have foreseeable, traceable, or verifiable climate effects. Even the GHG emissions of the largest project cannot "significantly affect [] the human environment."

Consequently, NEPA review of individual project-related GHG emissions serves no bona fide environmental, scientific, or economic purpose. Absent express directives in other statutes, GHG emissions have no proper role in NEPA-based project reviews and permitting decisions.

Although CEQ may balk at those conclusions, it has long acknowledged their premise—the climatological insignificance of project-related GHG emissions.

Section 1: Illusory Thresholds of Meaningfulness and Significance

Both the Obama and Trump CEQs acknowledged that individual projects do not discernibly influence global climate change, beginning with CEQ's 2010 Draft NEPA Guidance on Greenhouse Gas Emissions and Climate Change Effects. The document noted a stark difference between GHG sources and other sources: "From a quantitative perspective, there are no dominating sources and fewer sources that would even be close to dominating total GHG emissions."⁵ Which of the large universe of non-dominating sources should be covered?

The 2010 Draft GHG Guidance proposed that 25,000 tons or more of annual carbon dioxide-equivalent (CO₂e) emissions could provide "an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public."⁶ However, CEQ immediately clarified that it was not making a claim about climatic impact: "CEQ does not propose this as an indicator of a threshold of significant effects, but rather as an indicator of a minimum level of

⁵ CEQ, Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions February 18, 2010, p. 2, <https://obamawhitehouse.archives.gov/sites/default/files/microsites/ceq/20100218-nepa-consideration-effects-ghg-draft-guidance.pdf> (hereafter CEQ, 2010 Draft GHG Guidance).

⁶ CEQ, 2010 Draft GHG Guidance, p. 2.

GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs.”⁷

The 2010 Draft Guidance further stated: “CEQ does not propose this [25,000 ton] reference point as an indicator of a level of GHG emissions that may significantly affect the quality of the human environment.” Lest anyone mistakenly infer climatological significance, CEQ reiterated: “However, it is not currently useful for the NEPA analysis to attempt to link [proposed projects to] specific climatological changes, as such direct linkage is difficult to isolate and to understand.”⁸

Stakeholders were confused. How can NEPA analysis of a project emitting 25,000 tons of greenhouse gases per year be “meaningful” if that quantity of emissions is not environmentally significant?⁹

CEQ’s 2014 Draft GHG Guidance devoted several pages to the issue without resolving it. CEQ again proposed a 25,000 metric ton reference point while disclaiming an intent to make a “determination of significance.”¹⁰ Rather, the significance of an agency action depends on multiple factors, such as “the degree to which the proposal affects public health or safety, the degree to which its effects on the quality of the human environment are likely to be highly controversial, and the degree to which its possible effects on the human environment are highly uncertain or involve unique unknown risks.”¹¹

However, that restates rather than resolves the perplexity. The degree to which GHG emissions from an individual project affect public health and safety is for all practical purposes zero. The climatic insignificance of individual projects is non-controversial and highly certain. Greenhouse gas emissions from individual projects are not suspected of posing unique unknown risks.

After wrestling with comments ranging from ‘no project-level emissions are big enough to quantify’ to ‘no project-level emissions are too small to quantify,’ CEQ judged that a 25,000-ton disclosure threshold is “1) low enough to pull in the majority of large stationary sources of greenhouse gas emissions, but also 2) high enough to limit the number of sources covered that state and local air pollution permitting agencies could feasibly handle.”¹² In other words, administrative convenience rather than climatic significance would determine the cutoff.

Then, two years later, the final 2016 GHG guidance silently dropped the 25,000-ton threshold. The whole topic disappeared without a word of explanation or comment. Perhaps CEQ just gave

⁷ CEQ, 2010 Draft GHG Guidance, p. 2.

⁸ CEQ, 2010 Draft GHG Guidance, p. 3.

⁹ CEQ, Revised Draft Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews, 79 FR 77825, December 24, 2014, <https://www.govinfo.gov/content/pkg/FR-2014-12-24/pdf/2014-30035.pdf>.

¹⁰ 79 FR 77810.

¹¹ 79 FR 77810.

¹² 79 FR 77818.

up trying to explain how quantifying emissions that are not climatically “significant” could still be “meaningful.”¹³

Section 2: False Proxies

Although the climatological insignificance of project-related emissions has been Council’s consistent view since 2010, CEQ in 2014 continued to propose and in 2016 required agencies to quantify facility-level GHG emissions, and use that information to evaluate proposed actions, alternatives, and mitigation measures.

Based on what scientific rationale? CEQ argued that “projection of a proposed action’s direct and reasonably foreseeable indirect GHG emissions may be used as a proxy for assessing potential climate effects.”¹⁴ However, that is tantamount to saying, ‘Let’s pretend we know what we don’t know and regulate as if we did know.’

A proxy voter can cast a real, countable, ballot for an absentee voter. Data from tree rings, ice cores, fossil pollen, ocean sediments, and corals can be calibrated to instrumental data and then serve (albeit imperfectly) as proxies for climatic conditions in pre-industrial times. In contrast, no testable, measurable, or otherwise observable relationship exists between project-level greenhouse gas emissions and climate change effects. To call the former a “proxy” for the latter in an ostensibly scientific context is an abuse of language.

Section 3: Weaponizing NEPA

The Obama CEQ’s actual rationale for treating project-related emissions as climate effects for regulatory purposes appears to be political. Requiring agencies (hence also project applicants) to quantify the “direct and indirect” GHG emissions of proposed projects injects climate concerns into the daily routines of myriad public and private actors involved in building, upgrading, and reviewing energy infrastructure. It is a “consciousness raising” exercise. The “climate benefit” consists in forcing business leaders and agency heads to “think globally” whenever they act locally.

CEQ’s 2016 GHG Guidance claimed that incorporating GHG emissions into NEPA reviews would lead to “better decisions.”¹⁵ The Keystone XL Pipeline controversy shows that featuring climate concerns leads to irrational decisions.

The Keystone XL Pipeline (KXL) is perhaps the largest project to receive NEPA scrutiny for greenhouse gases. Even under the unrealistic assumptions that the KXL runs near full capacity (800,000 barrels per day) year-round and each barrel is additional oil produced solely to meet demand induced by the pipeline, the project would add less than 0.01°C of warming to global

¹³ CEQ, Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, August 1, 2016, https://ceq.doe.gov/docs/ceq-regulations-and-guidance/nepa_final_ghg_guidance.pdf (hereafter CEQ, 2016 Final GHG Guidance).

¹⁴ CEQ, 2010 Draft GHG Guidance, p. 3; 79 FR 77825; CEQ, 2016 Final GHG Guidance, pp. 4, 10.

¹⁵ CEQ, 2016 Final GHG Guidance, p. 6.

temperatures between now and 2100.¹⁶ That is well below the 0.08°C margin of error for estimating average annual global temperature.¹⁷

The pipeline's vanishingly small and unverifiable contribution to global warming in 2100 would have no discernible impact on weather patterns, crop yields, polar bear populations, or any other environmental condition people care about. Contrary to activist and media spin, the KXL is climatologically irrelevant.

NEPA-based reviews of the pipeline's climate change implications continued over a 10-year period, from July 2008¹⁸ to June 2019.¹⁹ The State Department's market analysis repeatedly concluded that the KXL is the 'climate friendly' option. If permission to build the KXL were denied, U.S. refiners would simply import Canadian crude by less energy-efficient modes (rail, barges, and smaller pipelines). Blocking the KXL would increase net CO₂ emissions by 28 to 42 percent relative to the pipeline approval scenario.²⁰

Note, too, that the KXL's potential economic benefits hugely exceed the undetectably small potential contribution to climate change. For example, during its 17 months of construction, the southern leg of the KXL (the "Gulf Coast Pipeline") injected an estimated \$5.7 billion into the Texas and Oklahoma economies, created thousands of jobs, and generated tens of millions of dollars in state and local tax revenues.²¹

The issue before the State Department was whether building the KXL would be in the national interest. That should have been a no-brainer. The pipeline is climatologically insignificant, it is the low-emission alternative, Canada is America's closest ally and trading partner, importing Canadian crude reduces U.S. reliance on OPEC, and pipelines are safer and less vulnerable to oil spills than crude-by-rail. Yet, after 10-years of NEPA-based review, President Obama killed the

¹⁶ Testimony of Paul C. "Chip" Knappenberger before the Subcommittees on Energy and Environment of the House Committee on Science, Space, and Technology, hearing on "Keystone XL Pipeline: Examination of the Scientific and Environmental Issues," May 7, 2013, <http://www.cato.org/publications/testimony/keystone-xl-pipeline-examination-scientific-environmental-issues>. The temperature calculation comes from the EPA's MAGICC model, assuming a climate sensitivity of 3°C for a doubling of atmospheric CO₂ concentration.

¹⁷ NOAA, "Global Temperature Uncertainty," <https://www.ncdc.noaa.gov/monitoring-references/faq/global-precision.php>.

¹⁸ The Associated Press, A Timeline of the Keystone XL oil pipeline, January 24, 2017, <https://apnews.com/5831ea1867454124aa4a97bc8d72e48b>

¹⁹ In November 2018, U.S. District Judge Brian Morris enjoined the State Department and TransCanada Corporation from engaging in any activities in furtherance of the KXL pending a "completed supplement" to the 2014 supplemental environmental impact statement that "complies with the requirements of NEPA and the APA." The Judge's order is available here: <https://assets.documentcloud.org/documents/5031466/Keystone-XL-pipeline-order-issued-by-U-S.pdf>. In June 2019, a panel of federal judges for the 9th U.S. Circuit vacated Judge Morris's injunction. Pamela King, "Judges: Keystone XL construction can begin," E&E News, June 9, 2019, <https://www.eenews.net/stories/1060504725>.

²⁰ State Department, *Final Supplemental Environmental Impact Assessment for the Keystone XL Pipeline Project*, Executive Summary (ES), January 2014, Errata Sheet, 34, <http://keystonepipeline-xl.state.gov/documents/organization/221135.pdf>.

²¹ Institute for Energy Research, "States Already Benefiting from Southern Leg of Keystone," July 8, 2014, <https://www.instituteforenergyresearch.org/fossil-fuels/gas-and-oil/states-benefitting-southern-leg-keystone-bakken-gets-pipelines/>.

project.²² Although the pointless and protracted NEPA proceeding ill-served the national interest, it helped the White House and its allies organize years of protests, recruit thousands of activists, and spread fear and loathing of “dirty fuels.”

Given that history, the Trump CEQ developed regulatory language to mitigate NEPA’s politicization and help agencies focus on the real risks and benefits of infrastructure projects.

Section 4: Fool’s Errand—Saving the Planet One Project at a Time

While abandoning a numerical “reference point” for “meaningful” GHG analysis, CEQ’s 2016 GHG Guidance nonetheless insists that NEPA is an appropriate framework for analyzing climate effects:

Climate change results from the incremental addition of GHG emissions from millions of individual sources, which collectively have a large impact on a global scale. CEQ recognizes that the totality of climate change impacts is not attributable to any single action, but are exacerbated by a series of actions including actions taken pursuant to decisions of the Federal Government. Therefore, a statement that emissions from a proposed Federal action represent only a small fraction of global emissions is essentially a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether or to what extent to consider climate change impacts under NEPA.²³

The 2016 GHG Guidance ignores the obvious. The “nature of the climate challenge” is what renders project-level GHG scrutiny a waste of time and effort. Requiring such analyses would turn NEPA into a make-work program.

If climate change results from the “incremental addition of GHG emissions from millions of individual sources,” and “emissions from a proposed federal action represent only a small fraction of global emissions” (perhaps no more than a few hundred thousandths of 1 percent),²⁴ then the GHG emissions from any individual action are climatically inconsequential. Attempting to solve the “climate change challenge” one project at a time is like trying to drain a swimming pool one thimbleful at a time. It is a fool’s errand.²⁵ A project’s GHG emissions is an inappropriate basis for granting or denying a permit, especially in the absence of a clear congressional directive to do so.

Section 5: “Effects” Language in the 2020 Rule

In this section I excerpt and italicize passages in the 2020 Rule dealing with effects, commenting on each in turn.

²² Elise Labott and Dan Berman, CNN, “Obama rejects Keystone XL Pipeline,” CNN Politics, November 6, 2015, <https://www.cnn.com/2015/11/06/politics/keystone-xl-pipeline-decision-rejection-kerry/index.html>.

²³ CEQ, 2016 Final GHG Guidance, p. 10.

²⁴ 79 FR 77810.

²⁵ Unless, of course, the real objective is to impede development and create a more litigious, regulated, and politicized society.

*Effects or impacts means changes to the human environment from the proposed action or alternatives that are reasonably foreseeable and have a reasonably close causal relationship to the proposed action or alternatives, including those effects that occur at the same time and place as the proposed action or alternatives and may include effects that are later in time or farther removed in distance from the proposed action or alternatives.*²⁶

Comment: Some effects that occur later in time or farther removed in distance from the proposed action may be foreseeable, but only if they have a reasonably traceable (“close”) causal connection. That is not the case with the climate effects of project-related GHG emissions, which are too small to isolate. Such effects, therefore, are not a proper subject of NEPA review. The same holds for consideration of alternatives on the basis of their GHG emission profiles.

*In considering the potentially affected environment, agencies should consider, as appropriate to the specific action, the affected area (national, regional, or local) and its resources, such as listed species and designated critical habitat under the Endangered Species Act. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend only upon the effects in the local area.*²⁷

Comment: Significance “varies with setting,” and for site-specific actions, “significance would usually depend only upon the effects in the local area.” All projects with GHG emissions are site-specific. Such emissions have no significance either for the local area or the world as a whole.

*Effects do not include those effects that the agency has no ability to prevent due to its limited statutory authority or would occur regardless of the proposed action.*²⁸

Comment: Anthropogenic climate change effects derive from the global pool of GHG emissions, itself a byproduct of myriad sinks and sources, located all over the world, over periods of decades to centuries. No project authorization or permitting decision can prevent such impacts, which would occur regardless of the proposed action. Most agencies lack express statutory authority to require reductions in GHG emissions. Hence, except in cases where emissions are statutorily regulated, the climate change effects of project-level GHG emissions are not a proper subject of NEPA review.

*Agencies are not expected to conduct exhaustive research on identifying and categorizing actions beyond the agency’s control.*²⁹

Comment: This statement is an inference from the preceding one. An example may help clarify its meaning. The authority to approve an interstate natural gas facility does not empower the Federal Energy Regulatory Commission (FERC) to control how gas is

²⁶ 85 FR 43375; 40 CFR § 1508.1(g).

²⁷ 85 FR 43360; 40 CFR § 1501.3(b)(1).

²⁸ 85 FR 43375; 40 CFR § 1508.1(g)(2).

²⁹ 85 FR 43344.

produced and consumed across the states and around the world. Exhaustive research on upstream and downstream GHG emissions would thus be a waste of the Commission's resources.

CEQ's 2016 GHG Guidance put it this way: "The rule of reason and the concept of proportionality caution against providing an in-depth analysis of emissions regardless of the insignificance of the quantity of GHG emissions that would be caused by the proposed agency action."³⁰ Fine words except that the guidance did confront the obvious implication. Because project-level GHG emissions are climatologically inconsequential, encouraging agencies to grant or reject permits based on a facility's GHG emissions profile flouts the rule of reason and concept of proportionality.

*... a "but for" causal relationship is insufficient to make an agency responsible for a particular effect under NEPA.*³¹

Comment: In other words, the fact that some quantity of gas would not be produced and consumed around the world "but for" FERC's approval of a pipeline, does not make the agency responsible for all the ways markets respond (or fail to respond) across time and space.

In an apparent effort to inflate the emissions profile of fossil-fuel infrastructure, CEQ's 2014 Draft GHG Guidance proposed to include the upstream emissions from extraction and mining as well as the downstream emissions from end-use combustion.³² This problematic expansion of NEPA beyond its statutory focus on the project itself proved so controversial that it was dropped in the 2016 GHG Guidance. CEQ should think twice before deleting the 2020 Rule's "but for" language.

Southern Methodist University law professor James W. Coleman identifies three problems with making an agency responsible for upstream and downstream emissions.³³ "First, the marginal impact of a single energy transport project in ever changing global energy markets is so uncertain that it provides no useful information to the agencies that decide on these projects." For example, he asks, "how can the government predict the effect of a single energy transport facility on global energy markets, especially when there are competing modes of transport?" He notes that "the most controversial part of the State Department's assessment of Keystone XL was its conclusion that denying the pipeline would actually increase global greenhouse gas emissions because oil would just move by trains instead."

Second, even if an agency can estimate the impact of a pipeline or power line on upstream and downstream markets, rejecting the project may still conflict with law or

³⁰ CEQ, Final 2016 GHG Guidance, p. 12.

³¹ 85 FR 43375; 40 CFR § 1508.1(g)(2).

³² 79 FR 77814.

³³ James W. Coleman, "Beyond the Pipeline Wars: Reforming Environmental Assessment of Energy Transport Infrastructure," *Utah Law Review*, Volume 2018, Number 1, Article 3, <https://dc.law.utah.edu/cgi/viewcontent.cgi?article=1142&context=ulr>.

policy. Coleman asks: “Should the government, as President Obama suggested, shut down any facility that encourages fossil fuel production? If so, how does that interact with the traditional standard for reviewing energy transport projects, which approves them only if they support energy production?”³⁴

Third, rejecting a pipeline because it would encourage energy production or consumption in international markets “is to assert the power and the authority to control energy markets in other countries—an undiplomatic encroachment on the authority of those countries to balance environmental and economic concerns in regulating their own energy markets.” Such extraterritorial regulation may also provoke constitutional challenges in cases where federal agencies attempt to “control upstream and downstream energy markets that have traditionally been regulated by the states.”

Section 6: NEPA Project Reviews Should Not Use Social Cost of Carbon Analysis

CEQ’s October 2021 proposal encourages agencies to “consider all available tools and resources in assessing GHG emissions and climate change effects of their proposed actions, including, as appropriate and relevant,” the Interagency Working Group’s Social Cost of Carbon (SCC) estimates.³⁵ That is not good advice.

The SCC has traditionally been used in regulatory benefit-cost analysis, not permitting decisions. That is partly because changes in emissions due to new regulatory requirements such as emission performance standards or emission caps are more predictable than changes in emissions due to the construction of bridges, highways, pipelines, and other infrastructure. The long-term impacts of infrastructure projects on emissions chiefly depend on energy market and macroeconomic developments, which are hard to foresee and beyond the agency’s control.³⁶

CEI is well aware of the Ninth Circuit’s 2008 ruling that the Department of Transportation must estimate the value of the CO₂ emission reductions resulting from fuel economy regulations.³⁷ The court argued that “while the record shows that there is a range of values, the value of carbon emissions reduction is certainly not zero.” Three responses are in order.

³⁴ Coleman cites U.S. Fed. Energy Reg. Commission, Order Granting Authorization under Section 3 of the Natural Gas Act and Issuing Certificates, 147 FERC ¶ 61,230 (June 19, 2014) (approving liquefied natural gas facility because it would lead to “increased production” as well as “increased economic activity and job creation, support for continued natural gas exploration, and increased tax revenue”).

³⁵ 86 FR 55763, fn. 25, citing the IWG’s February 2021 Technical Support Document on the Social Cost of Carbon, Methane, and Nitrous Oxide, available at https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf.

³⁶ The Energy Information Administration summarizes the track record of its annual energy forecasts as follows: “In an unbiased projection, with a sufficiently large number of samples, overestimates and underestimates over time would occur in equal measure. In comparing the AEO Reference case projections with realized outcomes from 1994 to 2019, out of the 25 variables listed in Table 1, 17 more variables have historically been overestimated than underestimated.” EIA, *Annual Energy Outlook Retrospective Review*, December 29, 2020, <https://www.eia.gov/outlooks/aeo/retrospective/>.

³⁷ *Center for Biological v. NHTSA* 538 F.3d 1172 (9th Cir. 2008).

First, it is by no means clear the Ninth Circuit’s ruling applies to permitting decisions. In *EarthReports, Inc. v. FERC* (2016), the D.C. Circuit upheld the Commission’s decision not to use SCC analysis when approving construction and operation of a liquefied natural gas export facility. The Commission concluded that SCC analysis would not be an “appropriate or informative” decision-making tool because, among other reasons, the tool “does not measure the actual incremental impacts of a project on the environment.” The court agreed.³⁸

Second, we may question the Ninth Circuit’s assumption that a “range of estimates” obligates an agency to pick a specific value within that range. Science can inform SCC analysis but SCC estimates are not science because futurology is not science. Let’s break that down.

- Federal agencies attempt to estimate the cumulative damages of an incremental ton of CO₂ out to the year 2300. Since it is total cumulative emissions that determine climate impact, the agencies must first estimate the trajectory of global emissions and concentrations over the next 280 years.
- Emissions come from economic activity. It is hard enough to get macroeconomic and energy market projections right over the next five years. No one can foresee the state of economic evolution in 2100, much less 2200 and 2300.
- A key part of SCC analysis is estimating the “damage function”—the assumed relationship between changes in global average temperature and changes in productivity, consumption, property damages, and the like. Human beings use technology to adapt to environmental conditions.
- Estimating future climate damages therefore requires forecasting how technology will develop—over centuries—as the world warms. Nothing is harder to foresee than long-term technological change.

Sometimes the most truthful answer is “we don’t know.”

Third, the Ninth Circuit did not consider an important aspect of the issue. Carbon dioxide emissions have positive as well as negative externalities. Global warming lengthens growing seasons.³⁹ Rising CO₂ concentration boosts crop yields and fortifies greenery everywhere.⁴⁰

Under some reasonable assumptions, the *net* social cost of carbon may be zero or even less than zero. For example, a recent study finds that when a leading SCC estimation model is run with updated empirical information about climate sensitivity⁴¹ and the agricultural benefits of

³⁸ *EarthReports, Inc. v. FERC*, 828 F.3d 949, 956 (D.C. Cir. 2016).

³⁹ EPA, Climate Change Indicators: Length of Growing Season, <https://www.epa.gov/climate-indicators/climate-change-indicators-length-growing-season>.

⁴⁰ Marlo Lewis, “Yet Another Study Confirms the Ecological Benefits of Carbon Dioxide,” OpenMarket.Org, April 10, 2017, <https://cei.org/blog/yet-another-study-confirms-ecological-benefits-of-carbon-dioxide/>.

⁴¹ Climate sensitivity is typically defined as the amount of warming that results after the climate system has fully adjusted to a doubling of atmospheric CO₂ concentration.

atmospheric CO₂ fertilization,⁴² the SCC drops to very small numbers, with a 45 percent probability of being negative, through the mid-21st century.⁴³ A negative cost is another way of saying a net benefit.

SCC analysis in general is too speculative and vulnerable to political manipulation to inform regulatory and permitting decisions. The IWG's SCC analysis is egregiously biased.⁴⁴ For example, the IWG averages the results of three integrated assessment models, abbreviated DICE, FUND, and PAGE.⁴⁵ DICE and PAGE effectively assign a value of zero dollars to the immense agricultural benefits of CO₂ atmospheric enrichment. PAGE implausibly assumes adaptation cannot mitigate the costs of climate change once global average temperature exceeds 2°C above pre-industrial levels and 21st century sea-level rise exceeds 10 inches.⁴⁶

University of Colorado professor Roger Pielke, Jr. recently brought to light another major bias in the IWG exercise. The SCC estimates are based on five emission scenarios of which four are "reference" (no climate policy) scenarios. Each reference scenario (USG1-4 below) projects post-2100 cumulative CO₂ emissions greater than total estimated fossil reserves.⁴⁷

⁴² Literally hundreds of peer-reviewed studies document significant increases in food crop photosynthesis, dry-weight biomass, and water-use efficiency due to elevated CO₂ concentrations. See the Center for the Study of Carbon Dioxide and Global Change's Plant-Growth Database:

http://co2science.org/data/plant_growth/plantgrowth.php

⁴³ Kevin D. Dayaratna, Ross McKittrick, and Patrick J. Michaels. 2020. Climate sensitivity, agricultural productivity and the social cost of carbon in FUND. *Environmental Economics and Policy Studies*, 22:433–448, <https://link.springer.com/content/pdf/10.1007/s10018-020-00263-w.pdf>. The authors ran the experiment with the FUND (Climate Framework for Uncertainty, Negotiation, and Distribution) model because it is the only one of the three integrated assessment models (IAMs) used by federal agencies that estimates CO₂ fertilization benefits.

⁴⁴ For a detailed discussion, see Patrick Michaels, Kevin Dayaratna, and Marlo Lewis, Comments on National Highway Traffic Safety Administration, Corporate Average Fuel Economy Standards for Model Years 2024–2026 Passenger Cars and Light Trucks, Proposed Rule, 86 FR 49602, October 26, 2021, <https://cei.org/wp-content/uploads/2021/10/CEI-Comments-Docket-No-NHTSA20210053-10-26-2021-pdf.pdf>.

⁴⁵ The three models are the Dynamic Integrated Climate-Economy (DICE) model, developed by Yale University economist William Nordhaus, <https://sites.google.com/site/williamdnordhaus/dice-rice>; the Climate Framework for Uncertainty, Negotiation, and Distribution (FUND) model, developed by University of Sussex economist Richard Tol and UC Berkeley data scientist David Anthoff, <http://www.fund-model.org/>; and the Policy Analysis of the Greenhouse Effect (PAGE) model, developed by Cambridge University economist Chris Hope, <https://www.jbs.cam.ac.uk/wp-content/uploads/2020/08/wp1104.pdf>.

⁴⁶ IWG, Technical Support Document: - Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis - Under Executive Order 12866, August 2016, pp. 14-15, https://19january2017snapshot.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf.

⁴⁷ Figure source: Electric Power Research Institute, *Understanding the Social Cost of Carbon: A Technical Assessment*, October 20, 2014, <https://www.epri.com/research/products/3002004657>.

Cumulative CO ₂ emissions (GtCO ₂)		
	By 2200	By 2300
USG1	11,207	16,741
USG2	20,024	33,023
USG3	8,113	10,864
USG4	14,092	20,504
USG5	3,691	4,843
Estimated reserves (GtCO ₂)	3,674 - 7,113	

For example, in the USG2 scenario, cumulative CO₂ emissions reach 22,024 gigatons in 2200 and 33,023 gigatons in 2300—multiples of total estimated reserves (3,674 – 7,113 gigatons).

To even approach such massive cumulative emissions, Pielke, Jr. observes, “the world would have to make it a policy goal to burn as much coal as possible over the coming centuries. That seems unlikely.”⁴⁸ He concludes: “If the world economy does not actually emit into the atmosphere tens of thousands of gigatons of carbon dioxide, as envisioned by the IWG, then the majority of the IWG SCC estimates are simply imaginary—setting aside all other methodological issues that might be raised.”

Part II: Comments on Specific Statements in CEQ’s Proposed Rule

In this part of the comments I excerpt and italicize passages from CEQ’s notice of proposed rulemaking, commenting on each in turn.

*While the 2020 NEPA Regulations retained the definition of “direct” effects without using the term, the revised definition creates ambiguity regarding whether and to what extent indirect effects are included in the definition of “effects.” In particular, the definition states in paragraph (g) that effects “may include effects that are later in time or farther removed in distance” but then states in paragraph (g)(2) that effects should generally not be considered if they are remote in time or geographically remote. CEQ’s proposed changes would provide clarity to agencies, practitioners, and the public by restoring the terms and definitions of “direct” and “indirect,” as these terms can help agencies and the public evaluate and understand the full scope of reasonably foreseeable effects in NEPA reviews.*⁴⁹

Comment: There is no confusion here but rather a cautionary statement about the limits of human foresight. Indirect effects are real, and many are foreseeable. However, the climatic effects of individual infrastructure projects do not fall into that category. Such effects should not be considered in determining whether to grant or deny permission to build a pipeline, transmission line, or LNG terminal, for example. CEQ’s proposal would

⁴⁸ Roger Pielke, Jr., “The Biden Administration Just Failed Its First Scientific Integrity Test,” The Honest Broker Newsletter, February 28, 2021, <https://rogerpielkejr.substack.com/p/the-biden-administration-just-failed>.

⁴⁹ 86 FR 55763.

give opponents a bottomless well of excuses to deny permission, since the times and places where the emissions might have undetectable, untraceable, and unverifiable effects are virtually limitless.

Use of the terms “direct” and “indirect” also can help explain both adverse and beneficial effects over various timeframes. For instance, a utility-scale solar facility could have short-term direct adverse effects, such as land impacts associated with construction. The facility also could have long-term indirect beneficial effects, such as reductions in air pollution, including greenhouse gas emissions, from the renewable energy generated by the solar facility that displaces more greenhouse gas-intensive energy sources (such as coal or natural gas) as an electricity source for years or decades into the future. Consistent with CEQ’s proposed restored definition, such indirect effects could be caused by the action to authorize a new solar facility, and would be later in time or farther removed in distance yet still reasonably foreseeable.⁵⁰

Comment: If indirect effects are reasonably foreseeable, they are already included in the 2020 Rule’s definition of effects. CEQ here compares apples to oranges to pears. It treats as analytically equivalent the reasonably anticipated land-use impacts of utility-scale solar, the less foreseeable effects on local air quality, and the unforeseeable effects on global climate.

The proposed rule also would remove and replace paragraph (g)(3), which . . . explicitly repeals the definition of cumulative impact in 40 CFR 1508.7 (2019). CEQ proposes to remove this language because it creates confusion and could be read to improperly narrow the scope of environmental effects relevant to NEPA analysis, contrary to NEPA’s purpose.⁵¹

Comment: The 2020 Rule could not improperly narrow the scope of NEPA analysis even if that were its objective. All environmental policy is based on cumulative effects analysis because very few spaces within the “human environment” are “pristine.” One must analyze historical and reasonably foreseeable pollution levels, land-use patterns, and biological conditions to estimate how a proposed project may significantly affect the human environment.

However, that approach is misplaced when applied to project-related GHG emissions. Climate change is nothing if not a “cumulative effect.” Project-related emissions do not significantly affect the global pool or its evolution, and have no identifiable or verifiable climate effects. In project permitting decisions, the only purposes served by requiring a cumulative analysis of a project’s GHG emissions are political.

In its June 2019 proposed revised guidance on applying NEPA to greenhouse gas emissions, CEQ sensibly observed that because “the potential effects of GHG emissions are inherently a global cumulative effect,” no individual project measurably increases cumulative impact; hence a “separate cumulative effects analysis is not required.”⁵²

⁵⁰ 86 FR 55763.

⁵¹ 86 FR 55762.

⁵² CEQ, Draft National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions, 84 FR 30098, June 26, 2019, <https://www.govinfo.gov/content/pkg/FR-2019-06-26/pdf/2019-13576.pdf>.

However, CEQ did not fully explicate what that insight implies. Because no individual project measurably increases cumulative impact, an analysis of the project’s incremental emissions is not required.

Part III: Conclusion

Mitigating climate change one project at a time is a fool’s errand akin to draining a swimming pool one thimbleful at a time. Worse, the economic losses from blocking individual projects based on greenhouse gas considerations are bound to vastly exceed the speculative climate benefits. Moreover, because affordable energy and economic growth are critical to human mastery of climate-related risks,⁵³ and because the climatological significance of any infrastructure project is, for all practical purposes, nil, blocking energy infrastructure or other private investment requiring federal agency approvals in the name of climate protection is bound to do more harm than good.

Congress did not direct CEQ to make climate policy, and NEPA review is unsuited for addressing climate change concerns. Accordingly, GHG emissions should not be a factor determining whether agencies approve or reject project proposals.

The rejoinder, conveniently furnished by CEQ’s 2016 GHG Guidance, is that although “individual sources of emissions each make relatively small additions to global atmospheric GHG concentrations,” the myriad diverse sources “collectively have large impact.”⁵⁴ The political implication is obvious: To mitigate “large impact,” permission should be denied to as many sources as possible—ideally to all.

The chief problem with that policy—aside from the enormous economic losses and suffering it would entail—is that Congress has not authorized it.

CEQ should take great care not to encourage agencies to do piecemeal what they clearly lack authority to do at the pace and scale desired by activist groups. Those who wish to make climate policy should do so through the proper venue—new legislation specifically addressing the subject—rather than by the reinterpretation of a 50-year old statute never intended and completely inappropriate for the purpose.

Respectfully Submitted,

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⁵³ Indur M. Goklany, *Wealth and Safety: The Amazing Decline in Deaths from Extreme Weather in an Era of Global Warming*, Reason Policy Study 393, September 2011, https://reason.org/wp-content/uploads/files/deaths_from_extreme_weather_1900_2010.pdf.

⁵⁴ 2016 Final GHG Guidance, p. 10.