

No. 22-30087

**IN THE UNITED STATES COURT OF APPEALS
FOR THE FIFTH CIRCUIT**

STATES OF LOUISIANA, ALABAMA, FLORIDA, GEORGIA, KENTUCKY,
MISSISSIPPI, SOUTH DAKOTA, TEXAS, WEST VIRGINIA, and WYOMING,

Plaintiffs-Appellees,

v.

JOSEPH R. BIDEN, JR., in his official capacity as President of the United States;
CECILIA ROUSE, in her official capacity as Chairwoman of the Council of Economic Advisers;
SHALANDA YOUNG, in her official capacity as Acting Director of the Office of Management
and Budget; KEI KOIZUMI, in his official capacity as Acting Director of the Office of Science
and Technology Policy; JANET YELLEN, in her official Capacity as Secretary of the
Treasury; DEB HAALAND, in her official capacity as Secretary of the Interior; TOM
VILSACK, in his official capacity as Secretary of Agriculture; GINA RAIMONDO, in her
official capacity as Secretary of Commerce; XAVIER BECERRA, in his official capacity as
Secretary of Health and Human Services; PETE BUTTIGIEG, in his official capacity as
Secretary of Transportation; JENNIFER GRANHOLM, in her official capacity as Secretary of
Energy; BRENDA MALLORY, in her official capacity as Chairwoman of the Council on
Environmental Quality; MICHAEL S. REGAN, in his official capacity as Administrator of the
Environmental Protection Agency; GINA MCCARTHY, in her official capacity as White House
National Climate Advisor; BRIAN DEESE, in his official capacity as Director of the National
Economic Council; JACK DANIELSON, in his official capacity as Executive Director of the
National Highway Traffic Safety Administration; U.S. ENVIRONMENTAL PROTECTION
AGENCY; U.S. DEPARTMENT OF ENERGY; U.S. DEPARTMENT OF
TRANSPORTATION; U.S. DEPARTMENT OF AGRICULTURE; U.S. DEPARTMENT OF
THE INTERIOR; NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION;
INTERAGENCY WORKING GROUP ON SOCIAL COST OF GREENHOUSE GASES,
Defendants-Appellants.

**EMERGENCY MOTION FOR STAY PENDING APPEAL
UNDER CIRCUIT RULE 27.3**

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TABLE OF CONTENTS

INTRODUCTION AND SUMMARY	1
STATEMENT	3
A. LEGAL BACKGROUND	3
1. Presidential Oversight of Rulemaking	3
2. Social Cost of Greenhouse Gases	4
3. Executive Order 13990 and the Interim Estimates	6
B. PROCEDURAL HISTORY	8
ARGUMENT	10
I. DEFENDANTS WILL LIKELY SUCCEED IN REVERSING THE INJUNCTION	11
A. The District Court Lacked Jurisdiction	11
1. Plaintiffs Lack Standing.	11
a. Plaintiffs Have Not Shown Injury In Fact.	12
b. Plaintiffs Have Not Shown Causation Or Redressability.	14
2. Plaintiffs' Claims Are Unripe.....	16
B. Plaintiffs Lack Any Viable Claims	18
1. Plaintiffs Have No Cause Of Action.	18
2. Plaintiffs' Claims Lack Merit.	19
C. Plaintiffs Face No Irreparable Harm.....	22
II. AT A MINIMUM, AN IMMEDIATE PARTIAL STAY IS NECESSARY TO NARROW THE INJUNCTION	23
III. EQUITABLE FACTORS OVERWHELMINGLY FAVOR A STAY	26

CONCLUSION.....28

CERTIFICATE OF COMPLIANCE

CERTIFICATE OF SERVICE

ATTACHMENTS:

Exhibit A (District Court Opinion)

Exhibit B (District Court Order)

Exhibit C (Executive Order 13,990)

Exhibit D (February 2021 Interim Estimates)

Exhibit E (OIRA Guidance)

Exhibit F (Mancini Declaration)

Exhibit G (*Missouri v. Biden* Slip Opinion)

TABLE OF AUTHORITIES

Cases:	<u>Page(s)</u>
<i>Alabama Ass’n of Realtors v. Department of Health & Human Servs.</i> , 141 S. Ct. 2485 (2021) (per curiam).....	19
<i>Alabama-Coushatta Tribe of Tex. v. United States</i> , 757 F.3d 484 (5th Cir. 2014)	18-19
<i>American Airlines, Inc. v. Herman</i> , 176 F.3d 283 (5th Cir. 1999)	19
<i>ASARCO Inc. v. Kadish</i> , 490 U.S. 605 (1989)	15
<i>Barber v. Bryant</i> , 860 F.3d 345 (5th Cir. 2017)	12, 27
<i>Benisek v. Lamone</i> , 138 S. Ct. 1942 (2018) (per curiam).....	27
<i>Bennett v. Spear</i> , 520 U.S. 154 (1997)	18
<i>Building & Constr. Trades Dep’t, AFL-CIO v. Allbaugh</i> , 295 F.3d 28 (D.C. Cir. 2002)	22
<i>California v. Bernhardt</i> , 472 F. Supp. 3d 573 (N.D. Cal. 2020).....	17, 26
<i>California v. Texas</i> , 141 S. Ct. 2104 (2021)	14
<i>Center for Biological Diversity v. EPA</i> , 937 F.3d 533 (5th Cir. 2019)	14, 15
<i>Center for Biological Diversity v. NHTSA</i> , 538 F.3d 1172 (9th Cir. 2008)	5, 17
<i>Clapper v. Amnesty Int’l USA</i> , 568 U.S. 398 (2013)	11, 12

<i>Collins v. Mnuchin</i> , 938 F.3d 553 (5th Cir. 2019) (en banc), <i>aff'd in part, rev'd in part</i> , 141 S. Ct. 1761 (2021)	20
<i>Crane v. Johnson</i> , 783 F.3d 244 (5th Cir. 2015)	13
<i>DaimlerChrysler Corp. v. Cuno</i> , 547 U.S. 332 (2006)	15
<i>Daniels Health Scis., L.L.C. v. Vascular Health Scis., L.L.C.</i> , 710 F.3d 579 (5th Cir. 2013)	22
<i>Dennis Melancon, Inc. v. City of New Orleans</i> , 703 F.3d 262 (5th Cir. 2012)	22
<i>DHS v. Regents of Univ. of California</i> , 140 S. Ct. 1891 (2020)	24
<i>El Paso County v. Trump</i> , 982 F.3d 332 (5th Cir. 2020)	13
<i>E.T. v. Paxton</i> , 19 F.4th 760 (5th Cir. 2021)	27
<i>Franklin v. Massachusetts</i> , 505 U.S. 788 (1992)	18
<i>Free Enter. Fund v. PCAOB</i> , 561 U.S. 477 (2010)	20
<i>Freedom From Religion Found. v. Mack</i> , 4 F.4th 306 (5th Cir. 2021)	27
<i>Google, Inc. v. Hood</i> , 822 F.3d 212 (5th Cir. 2016)	11
<i>Government of Manitoba v. Bernhardt</i> , 923 F.3d 173 (D.C. Cir. 2019)	13
<i>Louisiana v. Becerra</i> , 20 F.4th 260 (5th Cir. 2021) (per curiam)	23

<i>Lujan v. Defenders of Wildlife</i> , 504 U.S. 555 (1992)	11
<i>Lujan v. National Wildlife Fed’n</i> , 497 U.S. 871 (1990)	24
<i>Meyer v. Bush</i> , 981 F.2d 1288 (D.C. Cir. 1993)	18
<i>Missouri v. Biden</i> , No. 4:21-cv-287, __ F. Supp. 3d __, 2021 WL 3885590 (E.D. Mo. Aug. 31, 2021).....	<i>passim</i> (Ex. G)
<i>National Park Hosp. Ass’n v. Department of the Interior</i> , 538 U.S. 803 (2003)	16
<i>Nken v. Holder</i> , 556 U.S. 418 (2009)	10, 26
<i>Ohio Forestry Ass’n v. Sierra Club</i> , 523 U.S. 726 (1998)	17
<i>Palisades Gen. Hosp. v. Leavitt</i> , 426 F.3d 400 (D.C. Cir. 2005)	24
<i>Peoples Nat’l Bank v. Office of Comptroller of Currency</i> , 362 F.3d 333 (5th Cir. 2004)	18
<i>Seila Law LLC v. CFPB</i> , 140 S. Ct. 2183 (2020)	20
<i>Shrimpers & Fishermen of RGV v. Texas Comm’n on Env’tl. Quality</i> , 968 F.3d 419 (5th Cir. 2020)	12
<i>Sierra Club v. EPA</i> , 939 F.3d 649 (5th Cir. 2019)	22
<i>Sierra Club v. Peterson</i> , 228 F.3d 559 (5th Cir. 2000) (en banc)	19
<i>South Carolina v. Katzenbach</i> , 383 U.S. 301 (1966)	13

<i>Summers v. Earth Island Inst.</i> , 555 U.S. 488 (2009)	12, 14
<i>Texas v. United States</i> , 809 F.3d 134 (5th Cir. 2015)	11, 12
<i>United States v. Johnson</i> , 632 F.3d 912 (5th Cir. 2011)	21
<i>Walmart v. U.S. Dep’t of Justice</i> , 21 F.4th 300 (5th Cir. 2021).....	17
<i>WildEarth Guardians v. Bernhardt</i> , No. 17-cv-80, 2021 WL 363955 (D. Mont. Feb. 3, 2021).....	17
<i>Wyoming v. U.S. Dep’t of the Interior</i> , 493 F. Supp. 3d 1046 (D. Wyo. 2020).....	17
<i>Zero Zone, Inc. v. U.S. Dep’t of Energy</i> , 832 F.3d 654 (7th Cir. 2016)	6, 17, 21, 26

Constitution:

U.S. Const. art. II, §§ 1-2.....	26
----------------------------------	----

Executive Orders:

Exec. Order No. 12866, 58 Fed. Reg. 51,735 (Sep. 30, 1993)	3-4
Exec. Order No. 13783, 82 Fed. Reg. 16,093 (Mar. 28, 2017)	6
Exec. Order No. 13990, 86 Fed. Reg. 7037 (Jan. 20, 2021)	<i>passim</i> (Ex. C)

Other Authorities:

86 Fed. Reg. 24,669 (May 7, 2021)	7
---	---

Interagency Working Group on Social Cost of Greenhouse Gases, <i>Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide, Interim Estimates Under Executive Order 13990</i> (Feb. 2021)	7 (Ex. D)
Office of Info. & Regulatory Affairs (OIRA), Social Cost of Greenhouse Gas Emissions: Frequently Asked Questions (FAQs) (June 3, 2021)	7, 21 (Ex. E)
Office of Mgmt. & Budget (OMB), Circular A-4 (2003), https://perma.cc/CVU2-QUCE	4, 25

INTRODUCTION AND SUMMARY

The preliminary injunction entered here presents an unprecedented, completely unjustified interference with Executive Branch operations. Defendants respectfully seek a stay pending appeal or, at minimum, an immediate partial stay insofar as the injunction goes beyond enjoining mandatory use of the Interim Estimates challenged by Plaintiffs. Because of the injunction's broad impact and resulting pressing need for relief, a ruling is requested by March 15, 2022.

This case centers not on any final agency action, but on a tool of regulatory cost-benefit analysis. Following in predecessors' footsteps, the President issued an Executive Order instructing agencies on compliance with longstanding regulatory-review requirements. The Order directed an interagency Working Group to disseminate temporary estimates for the social costs of certain greenhouse gases to be used in internal regulatory analyses. These accounting metrics neither bind States nor impose direct regulatory burdens on anyone. Louisiana and nine other States nonetheless attack the Interim Estimates in the abstract, wholly apart from whether they are used to justify any particular agency action.

Another court recently dismissed a parallel challenge to the Interim Estimates, explaining that judicial review is available if and when the Interim Estimates are ever used to justify some regulation. *See Missouri v. Biden*, __F.Supp.3d__, 2021 WL 3885590 (E.D. Mo. Aug. 31, 2021), *appeal pending*, No. 21-3013 (8th Cir.). Yet the district court here, without ruling on the government’s motion to dismiss, entered a government-wide preliminary injunction against any use of the Interim Estimates. *See* Exhibit A (Op.).

Even more strikingly, the court adopted—without explanation—plaintiffs’ proposed injunction. *See* Exhibit B (Order). The injunction not only vacates the Interim Estimates, but suspends the Working Group; disables agencies from “employing” or “relying on” *any* of the Working Group’s past analyses; and imposes specific methodological restraints that lack any statutory basis. Plaintiffs could not obtain that relief at final judgment, and never offered any briefing to support those unprecedented demands.

The injunction should be immediately stayed. Plaintiffs lack standing and their claims are unripe and not currently actionable under the APA. Review is proper if and when the Interim Estimates are used to justify imposing some concrete burden on Plaintiffs. Unless and until that occurs,

Plaintiffs suffer no cognizable harm—let alone *irreparable* harm—from the Estimates’ mere existence.

At a minimum, the injunction should be immediately stayed to the extent it goes beyond enjoining the Interim Estimates’ alleged mandatory effect. The injunction usurps the President’s authority to supervise the Executive Branch, engages in impermissible *ex ante* control of rulemaking, and interferes with agencies’ ability to comply with statutory requirements and court orders—while doing nothing to prevent any harm to Plaintiffs.

STATEMENT

A. Legal Background

1. Presidential Oversight of Rulemaking

The President has long exercised oversight of policymaking and rulemaking processes within the Executive Branch. Since the early 1970s, every President has required some form of centralized review. And since 1993, Executive Order 12866 has mandated a prepublication review process involving cost-benefit analysis for all “economically significant” regulations. Analyses prepared under E.O. 12866 are advisory documents without legal effect and not directly subject to judicial review.

Office of Management and Budget (OMB) Circular A-4, a 2003 guidance not required by any statute, advises agencies how to conduct cost-benefit analysis that “monetize[s] quantitative estimates” of all direct and indirect benefits and costs. OMB Circular A-4, at 27 (2003), <https://perma.cc/CVU2-QUCE>. Among other topics, Circular A-4 explains that agencies should mathematically discount future-accruing benefits and costs. It suggests default discount rates of 3 and 7 percent, but endorses rates of “1 to 3 percent” in cases affecting the welfare of future generations. *Id.* at 35-36. It also instructs agencies to account “separately” for effects on “citizens and residents of the United States” and those on other countries. *Id.* at 15. But it disclaims any particular “formula,” emphasizing that agencies must “exercise professional judgment” in a context-sensitive manner using the best evidence available. *Id.* at 2-3, 17; *see* Mancini Decl. ¶¶ 7-15 (Exhibit F).

2. Social Cost of Greenhouse Gases

Since the George W. Bush Administration, cost-benefit analyses under E.O. 12866 have considered impacts of emissions of greenhouse gases—carbon dioxide, methane, and nitrous oxide—known to affect global climate change. Agencies have quantified these impacts with scientific models that estimate the effects of emissions on various factors (such as net changes in

agricultural productivity, sea-level rise, and human health) and aggregate them into dollar estimates per ton of gas emitted, known as the social cost of greenhouse gases (SC-GHG).

In 2008, a court of appeals invalidated a fuel-economy standard because the agency failed to “monetize the benefit of carbon emissions reduction[s].” *Center for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1203 (9th Cir. 2008). Agencies thereafter began to account for carbon emissions using varying social-cost estimates. In 2009, to encourage consistency and use of the best-available science, an interagency group of technical experts was convened to develop a scientifically robust, legally defensible method for quantifying marginal costs of carbon emissions.

In 2010, this interagency Working Group developed a methodology that synthesizes three independent models (one yielding a Nobel Prize) that were the most widely accepted, peer-reviewed frameworks for translating GHG emissions into climate impacts. In ensuing years, OMB sought public comment on the methodology and resulting estimates and obtained multiple forms of outside expert review, including by the National Academies of Sciences, Engineering, and Medicine.

Though agencies were not expressly required to employ the estimates in rulemaking, many chose to do so. In 2016, the Seventh Circuit upheld consideration of the 2013 estimates—including their quantification of global benefits—in the context of a federal energy-efficiency rule for commercial-refrigeration equipment. *Zero Zone, Inc. v. U.S. Dep’t of Energy*, 832 F.3d 654, 677-78 (7th Cir. 2016).

In 2017, President Trump disbanded the Working Group and withdrew its analyses. Exec. Order No. 13783, § 5(b). He nonetheless expected that agencies would continue to “monetiz[e] the value of changes in greenhouse gas emissions,” and directed that agencies ensure “to the extent permitted by law” that “any such estimates are consistent with the guidance contained in OMB Circular A-4.” *Id.* § 5(c).

3. Executive Order 13990 and the Interim Estimates

President Biden issued E.O. 13990 in January 2021 (Exhibit C). Section 5 stated the President’s determination that use of global SC-GHG estimates “facilitates sound decision-making, recognizes the breadth of climate impacts, and supports the international leadership of the United States on climate issues.” *Id.* It also reconvened the Working Group to formulate revised SC-GHG estimates, targeted for January 2022. In the

interim, Section 5 directed the Working Group to publish “interim” SC-GHG estimates “within 30 days,” and stated that “agencies shall use” those estimates “when monetizing the value of changes in greenhouse gas emissions resulting from regulations and other relevant agency actions,” to the extent “consistent with applicable law.” *Id.* § 5(b)(ii)(A).

Accordingly, in February 2021, the Working Group issued a Technical Support Document containing the Interim Estimates at issue here (Exhibit D). These Estimates were identical to prior 2016 estimates, adjusted for inflation, which the Working Group found to be better justified methodologically than more recent estimates. OMB invited public comment on the Estimates’ methodology. 86 Fed. Reg. 24,669 (May 7, 2021).

In June 2021, Office of Information and Regulatory Affairs (OIRA) guidance confirmed that agencies using the Interim Estimates must do so “subject to applicable law.” OIRA Guidance 1 (Exhibit E). Thus, “[w]hen an agency conducts benefit-cost analysis pursuant to specific statutory authorities,” those requirements “must dictate whether and how the agency monetizes changes in greenhouse gas emissions in th[at] context.” *Id.* It also instructed agencies to solicit and respond to public comment on the Interim Estimates as part of any rulemaking. *Id.*

B. Procedural History

1. Plaintiffs brought this suit preemptively challenging the Interim Estimates. Plaintiffs name as defendants 23 federal entities or officials, including the President, and claim that the Interim Estimates are procedurally invalid, arbitrary and capricious, inconsistent with various agency-specific statutes, and statutorily *ultra vires*.

Defendants moved to dismiss, explaining that Plaintiffs lack standing and their claims are unripe and currently nonactionable because any alleged injuries would result from hypothetical future regulations, not the Interim Estimates. Plaintiffs eventually moved for a preliminary injunction. The government opposed, explaining that Plaintiffs failed to show irreparable harm and that the relief they sought was overbroad.

2. On February 11, without ruling on the motion to dismiss, the district court granted Plaintiffs' motion and adopted their proposed order.

The district court rejected some (though not all) of the government's threshold objections. Op. 11-27. The court allowed Plaintiffs to invoke *parens patriae* standing; credited Plaintiffs' assertions that the Interim Estimates would result in increased regulatory burdens; and accepted Plaintiffs' incorrect premise that States themselves are bound to apply the

Interim Estimates in “cooperative-federalism” programs. The court further concluded that the Interim Estimates constituted final agency action.

The district court also concluded that Plaintiffs would likely succeed on their claims. It apparently recognized that federal agencies are authorized (if not required) by existing statutes to monetize GHG emissions, yet nonetheless concluded that the Working Group was precluded by the “major questions doctrine” from providing coordinative assistance. Op. 29-34.

The court also concluded that the Interim Estimates were procedurally invalid; substantively incompatible with certain agency-specific statutes; and “arbitrary and capricious” based on “numerous arguments” pressed by Plaintiffs, which the court listed in bullet points but did not further discuss. Op. 34-38.

The district court then concluded that an injunction was warranted. It stated, without elaboration, that Plaintiffs’ asserted harms could not be avoided through “meaningful judicial relief in the future,” and it found that other equitable factors weighed in their favor. Op. 42-44. The district court ordered that all Defendants except the President are “ENJOINED and RESTRAINED from”:

- (1) adopting, employing, treating as binding, or relying upon the work product of the Interagency Working Group (“IWG”);

(2) enjoining Defendants from independently relying upon the IWG's methodology considering global effects, discount rates, and time horizons; and (3) ordering Defendants to return to the guidance of Circular A-4 in conducting regulatory analysis; [*sic*]

(2) Adopting, employing, treating as binding, or relying upon any Social Cost of Greenhouse Gas estimates based on global effects or that otherwise fails to comply with applicable law;

(3) Adopting, employing, treating as binding, or relying upon any estimate of Social Cost of Greenhouse Gases that does not utilize discount rates of 3 and 7 percent or that otherwise does not comply with Circular A-4; and

(4) Relying upon or implementing Section 5 of Executive Order 13990 in any manner.

Order 1-2. The court provided no explanation for imposing that relief, for which Plaintiffs likewise failed to provide any briefing.

3. Defendants promptly appealed and moved in district court for a stay pending appeal, requesting a ruling by February 28. The court has not yet ruled, but requested Plaintiffs' response by March 4.

ARGUMENT

A motion for stay pending appeal is governed by the four-factor test in *Nken v. Holder*, 556 U.S. 418, 426 (2009). Each factor supports a stay here.

I. DEFENDANTS WILL LIKELY SUCCEED IN REVERSING THE INJUNCTION

Plaintiffs cannot meet any, much less all, of the requirements for a preliminary injunction. *See Google, Inc. v. Hood*, 822 F.3d 212, 220 (5th Cir. 2016).

A. The District Court Lacked Jurisdiction

This suit is incompatible with Article III. Plaintiffs do not challenge particular actions that “caus[e] them harm,” but instead attack a “generalized level of Government action” in a misguided effort to preemptively restructure rulemaking processes across the Executive Branch. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 568 (1992).

1. Plaintiffs Lack Standing.

Plaintiffs fall well short of establishing standing. States, though afforded “special solicitude” in some circumstances, nevertheless “must show an injury that is ‘concrete, particularized, and actual or imminent; fairly traceable to the challenged action; and redressable by a favorable ruling.’” *Texas v. United States*, 809 F.3d 134, 150 (5th Cir. 2015) (quoting *Clapper v. Amnesty Int’l USA*, 568 U.S. 398, 409 (2013)). And plaintiffs seeking injunctive relief cannot rest on *allegations*, but rather, must make a “‘clear

showing’ that they have standing to maintain the preliminary injunction.”

Barber v. Bryant, 860 F.3d 345, 352 (5th Cir. 2017) (emphasis added).

a. Plaintiffs Have Not Shown Injury In Fact.

Plaintiffs have not alleged—much less shown—any injury that is “concrete, particularized, and actual or imminent.” *Texas*, 809 F.3d at 150. An injury is “imminent” only when it is “*certainly impending*”; “allegations of *possible* future injury are not sufficient.” *Barber*, 860 F.3d at 357 (quoting *Clapper*, 568 U.S. at 409) (emphases in original; brackets omitted).

E.O. 13990 and the Interim Estimates are not directed to, and do not impose any burden upon, Plaintiffs or the public. Plaintiffs instead hypothesize that the Estimates will somehow, someday be used to justify burdensome regulations. But Article III requires Plaintiffs to identify a specific, sufficiently imminent injury. *See, e.g., Summers v. Earth Island Inst.*, 555 U.S. 488, 493-97 (2009) (plaintiffs could not rely on “statistical probability” of harm from operation of agency regulations that “neither require[d] nor forb[ade] any [particular regulatory] action,” but instead prescribed “standards and procedures” for federal “project planning”); *Shrimpers & Fishermen of RGV v. Texas Comm’n on Envtl. Quality*, 968 F.3d 419, 424-25 (5th Cir. 2020) (rejecting “concept of ‘probabilistic standing’

based on a non-particularized ‘increased risk’”); *Crane v. Johnson*, 783 F.3d 244, 252 (5th Cir. 2015).

The district court mistakenly credited Plaintiffs’ assertion that States “must use” the Estimates in administering “cooperative-federalism” programs. Op. 19, 21, 41. E.O. 13990 and the Estimates expressly apply *only* to federal “executive departments and agencies.” E.O. 13990, § 1. And to the extent Plaintiffs contend that federal agencies might apply the Interim Estimates in cooperative-federalism programs in an arbitrary-and-capricious manner, their remedy is to seek review of those specific actions.

The district court compounded its error by allowing *parens patriae* standing. A “State [does not] have standing as the parent of its citizens” to sue “the Federal Government.” *South Carolina v. Katzenbach*, 383 U.S. 301, 324 (1966); *see Government of Manitoba v. Bernhardt*, 923 F.3d 173, 179-83 (D.C. Cir. 2019). Nor does “loss of general tax revenues as an indirect result of federal policy” constitute “a cognizable injury.” *El Paso County v. Trump*, 982 F.3d 332, 339 (5th Cir. 2020).

The district court further erred in finding that Plaintiffs were injured by alleged “depriv[ation] of the right to submit comments” on the Interim Estimates. Op. 21. Being “denied the ability to file comments” is

“insufficient to create Article III standing,” *Summers*, 555 U.S. at 496; rather a “procedural-rights” plaintiff must also show “concrete” injury from the “substantive government action” at issue. *Center for Biological Diversity v. EPA*, 937 F.3d 533, 543-44 (5th Cir. 2019). Here, Plaintiffs were not harmed by the Interim Estimates’ mere issuance, and have not even suffered procedural injury: Plaintiffs will have the opportunity to comment when it matters—if agencies propose to rely on the Interim Estimates to issue rules—and in turn to seek judicial review.

b. Plaintiffs Have Not Shown Causation Or Redressability.

Likewise, Plaintiffs’ claimed injuries are not “fairly traceable” to the Interim Estimates or redressable by legally available relief. *California v. Texas*, 141 S. Ct. 2104, 2113 (2021).

First, neither E.O. 13990 nor the Interim Estimates require any agency to promulgate any particular regulation. *See Missouri* op. 19 (Exhibit G). Instead, they impose a procedural condition that *if* agencies propose regulations requiring cost-benefit analysis under E.O. 12866, and *if* they monetize GHG emissions in that analysis, then the agencies must use the Interim Estimates (and not others) unless contrary to law.

Second, there are countless reasons why agencies might issue new regulations. Agencies undertake “policy judgment[s] committed to the[ir] broad and legitimate discretion,” *DaimlerChrysler Corp. v. Cuno*, 547 U.S. 332, 345 (2006) (quoting *ASARCO Inc. v. Kadish*, 490 U.S. 605, 614-15 (1989)), and the reasoning they ultimately adopt will control the scope of any judicial review. “[C]ourts cannot presume either to control or to predict” whether agencies will rely on cost-benefit analyses that monetize GHG emissions to justify any particular regulation. *ASARCO*, 490 U.S. at 614-15.

Third, an agency’s monetization of GHG emissions may make no bottom-line difference. A rule may be found justified in cost-benefit terms based on other factors, such as health and safety improvements, wholly apart from climatic effects. Plaintiffs can establish causation only if they “demonstrate that the [regulations] that will cause their assumed injuries will be [justified] pursuant to the [Interim Estimates], and not pursuant to some other authority.” *Center for Biological Diversity*, 937 F.3d at 544.

Fourth, even if an agency does justify regulation based on GHG emission reductions, it might not rely on the Interim Estimates, which are expressly temporary. Once superseded, the Interim Estimates no longer

“shall [be] use[d]” by agencies, and Plaintiffs could not be harmed by them. E.O. 13990, § 5(b)(ii)(A).

Finally, the legally available relief for Plaintiffs’ APA claims—setting aside the Interim Estimates—would not redress their claimed injury. Plaintiffs have never disputed that, absent the Estimates, agencies would remain free to—and may be required to—consider GHG emissions in their cost-benefit analyses, and they would remain free to propose and promulgate the very regulations that Plaintiffs claim will injure them.

2. Plaintiffs’ Claims Are Unripe.

The injunction is also improper because, as the government argued but the district court failed to address, this suit concerns “abstract disagreements over administrative policies” foreclosed by ripeness doctrine. *National Park Hosp. Ass’n v. Department of the Interior*, 538 U.S. 803, 807-08 (2003). The Estimates do not regulate primary conduct, and Plaintiffs have not shown an “immediate[]” impact on “their day-to-day affairs.” *Id.* Indeed, their objections to the Interim Estimates are untethered from any particular agency action. The ripeness problem is underscored by Plaintiffs’ indiscriminate assertion of claims against 23 agencies and officials; the distinct statutory contexts in which those Defendants might take action; and

the many “discrepancies” between Plaintiffs’ assertions about the Interim Estimates and the government’s “materially different” and “unequivocally expressed” positions on those same questions. *Walmart v. U.S. Dep’t of Justice*, 21 F.4th 300, 311-12 (5th Cir. 2021).

Until now, every court to consider SC-GHG estimates has done so in the context of specific agency actions, and for good reason.¹ Some statutes require cost-benefit analysis; others forbid it; and others afford discretion. Claims like Plaintiffs’ cannot be addressed “*en masse*.” *Missouri* op. 28.

Meanwhile, Plaintiffs face no cognizable hardship. They “will have ample opportunity to bring legal challenges to particular regulations if those regulations pose imminent, concrete, and particularized injury” by pursuing “the normal review process under the APA.” *Missouri* op. 25-26. Plaintiffs may prefer “to mount one legal challenge” rather than pursue “case-by-case review, but Article III and prudential considerations foreclose that strategy. *Ohio Forestry Ass’n v. Sierra Club*, 523 U.S. 726, 734-35 (1998).

¹ See *Zero Zone*, 832 F.3d at 677; *Center for Biological Diversity*, 538 F.3d at 1203; *WildEarth Guardians v. Bernhardt*, No. 17-cv-80, 2021 WL 363955, at *10 (D. Mont. Feb. 3, 2021); *Wyoming v. U.S. Dep’t of the Interior*, 493 F. Supp. 3d 1046, 1078-81 (D. Wyo. 2020); *California v. Bernhardt*, 472 F. Supp. 3d 573, 611-14 (N.D. Cal. 2020).

B. Plaintiffs Lack Any Viable Claims

Plaintiffs' claims are unreviewable and in any event lack merit.

1. Plaintiffs Have No Cause Of Action.

Plaintiffs have not identified any available cause of action. First, neither the President nor the Working Group are “agenc[ies]” under the APA. *See Franklin v. Massachusetts*, 505 U.S. 788, 796 (1992). The Working Group is an ad hoc assemblage of presidentially convened experts, not a statutorily created body that wields “‘substantial independent authority.’” *Meyer v. Bush*, 981 F.2d 1288, 1297 (D.C. Cir. 1993).

Second, the Interim Estimates are not “final” agency action, *i.e.*, action that is both the “consummation of [an] agency’s decisionmaking process” and “one by which ‘rights or obligations have been determined,’ or from which ‘legal consequences will flow.’” *Bennett v. Spear*, 520 U.S. 154, 177-78 (1997). The Estimates can “affect [Plaintiffs’] rights [only] on the contingency of future administrative action” by a regulatory agency. *Peoples Nat’l Bank v. Office of Comptroller of Currency*, 362 F.3d 333, 337 (5th Cir. 2004). If and when an agency does take action in reliance on the Interim Estimates, Plaintiffs may seek review at that time. *See, e.g., Alabama-Coushatta Tribe*

of Tex. v. United States, 757 F.3d 484, 490-91 (5th Cir. 2014); *Sierra Club v. Peterson*, 228 F.3d 559, 565-67 (5th Cir. 2000) (en banc).

Third, Plaintiffs cannot invoke a nonstatutory *ultra-vires* cause of action, because the APA or other special statutory-review procedures already provide for meaningful review at the appropriate time. *See, e.g., American Airlines, Inc. v. Herman*, 176 F.3d 283, 293-94 (5th Cir. 1999).

2. Plaintiffs’ Claims Lack Merit.

Plaintiffs’ legal theories reflect a fundamental misunderstanding of administrative law and presidential regulatory oversight.

The district court’s principal basis for decision (Op. 30-34) is that the Interim Estimates implicate “major questions” and that courts should “expect Congress to speak clearly” before allowing an agency to make decisions “of vast economic and political significance.” *Alabama Ass’n of Realtors v. Department of Health & Human Servs.*, 141 S. Ct. 2485, 2489 (2021) (per curiam) (quotation marks omitted). That proposition has no application here. Agencies are *already* permitted by statute to consider GHG emission effects in their cost-benefit analyses, and they have done so throughout the last four Presidential Administrations. A “major questions”

doctrine has never been invoked to prevent the President from supervising and coordinating agencies' exercise of existing statutory authorities.

Indeed, though the district court sought to vindicate “separation-of-powers” principles (Op. 5), its ruling raises substantial constitutional concerns. The Constitution vests in the President, alone, “[t]he entire ‘executive Power’” to “take Care that the Laws be faithfully executed.” *Seila Law LLC v. CFPB*, 140 S. Ct. 2183, 2197 (2020). That power embraces both the authority and the duty to maintain “general administrative control of those executing the laws.” *Id.* at 2197-98. Courts have repeatedly invalidated efforts to insulate Executive Branch officials from presidential oversight and control. *See, e.g., id.* at 2203 (Executive officials must “remain[] subject to the ongoing supervision and control of the elected President”); *Free Enter. Fund v. PCAOB*, 561 U.S. 477, 492 (2010) (same); *Collins v. Mnuchin*, 938 F.3d 553, 587-88 (5th Cir. 2019) (en banc), *aff’d in part, rev’d in part*, 141 S. Ct. 1761 (2021). And every President since Nixon has invoked that power to require centralized supervision of agency rulemaking, including by imposing requirements and standards for cost-benefit analysis. The district court identified no reason why E.O. 12866 and

Circular A-4 are valid, but Section 5 of E.O. 13990 and the Interim Estimates are not.

Plaintiffs' procedural claim also fails. Even assuming the Working Group were an "agency," the Interim Estimates are not legislative rules requiring notice and comment because they do not directly regulate anyone, and their future use will be subject to notice and comment in other rulemakings. *See* OIRA Guidance 2. In any event, the claim fails under the APA's harmless-error provision, *see United States v. Johnson*, 632 F.3d 912, 930 (5th Cir. 2011), because the Estimates are simply the same inflation-adjusted estimates that previously underwent multiple rounds of notice and comment, including in agency rulemakings.

Plaintiffs' substantive criticisms of the Interim Estimates are likewise baseless. Again, agencies already may (or must) account for climate impacts in cost-benefit analysis. The Interim Estimates—built upon a rigorous methodology incorporating the best available science and economics (including a Nobel-Prize-winning model)—are, at a minimum, a reasonable response to the pressing need for guidance in that endeavor. The Estimates' inclusion of global effects is permissible for the reasons recognized by the Seventh Circuit. *See Zero Zone*, 832 F.3d at 679. And their use of various

discount rates to account for uncertainty and intergenerational-equity concerns is reasonable and, moreover, consistent with Circular A-4. The district court seriously erred in failing to afford “most deferential” review to the Working Group’s “evaluation of complex scientific data within [its] technical expertise.” *Sierra Club v. EPA*, 939 F.3d 649, 680 (5th Cir. 2019).

C. Plaintiffs Face No Irreparable Harm

In any event, Plaintiffs have not shown any harm that is “irreparable.” *Daniels Health Scis., L.L.C. v. Vascular Health Scis., L.L.C.*, 710 F.3d 579, 585 (5th Cir. 2013). The Interim Estimates do not require Plaintiffs to do (or not do) anything. And if they are later relied upon to Plaintiffs’ detriment, Plaintiffs have an “adequate remedy”: they may seek review, in the appropriate court and at the appropriate time, of any such agency action. *Id.*; see *Dennis Melancon, Inc. v. City of New Orleans*, 703 F.3d 262, 279 (5th Cir. 2012) (harms addressable “in the ordinary course of litigation” are not irreparable); *Building & Const. Trades Dep’t, AFL-CIO v. Allbaugh*, 295 F.3d 28, 33 (D.C. Cir. 2002) (vacating injunction against executive order because even if “some agency might [invoke it to] make a legally suspect decision,” “an aggrieved party may seek redress” at that time).

II. AT A MINIMUM, AN IMMEDIATE PARTIAL STAY IS NECESSARY TO NARROW THE INJUNCTION

At a minimum, the injunction should be immediately stayed to the extent it goes beyond enjoining the Interim Estimates’ alleged mandatory effect. Not only is the injunction overbroad—going well beyond appropriate APA relief—but its specific substantive provisions are illogical, unreasonable, and unlawful.

Initially, the injunction is an abuse of discretion because its scope is entirely unexplained. The district court did not find its various provisions necessary to redress irreparable harm to Plaintiffs, and Plaintiffs never attempted to justify them, either (even though Defendants clearly challenged Plaintiffs’ proposed scope of relief). This Court recently entered a partial stay where the district court gave “little justification” for the scope of injunctive relief, *Louisiana v. Becerra*, 20 F.4th 260, 263-64 (5th Cir. 2021) (per curiam); here, none was given at all.

Indeed, there can be no justification for this plainly overbroad relief. As an equitable and constitutional matter, a “remedy must be ‘limited to the inadequacy that produced [Plaintiffs’] injury in fact.’” *Gill v. Whitford*, 138 S. Ct. 1916, 1930 (2018). Plaintiffs brought suit to challenge the President’s directive in Section 5 of E.O. 13990 that “agencies shall use” the Interim

Estimates “when monetizing the value of changes in greenhouse gas emissions resulting from regulations and other relevant agency actions.” That is the only “action” the district court could properly set aside (or enjoin). “[U]nder settled principles of administrative law, when a court reviewing agency action determines that an agency made an error of law, the court’s inquiry is at an end: the case must be remanded to the agency for further action.” *Palisades Gen. Hosp. v. Leavitt*, 426 F.3d 400, 403 (D.C. Cir. 2005). The APA does not permit a plaintiff to demand “programmatic improvements,” *Lujan v. National Wildlife Fed’n*, 497 U.S. 871, 891 (1990), or a court to “substitute its judgment for that of the agency,” *DHS v. Regents of Univ. of California*, 140 S. Ct. 1891, 1905 (2020).

Even on their own terms, the injunction’s provisions are illogical and unreasonable. If there were any merit to Plaintiffs’ claim that it was unlawful for the President to direct “mandatory implementation” of the Interim Estimates (Op. 19-20), that claim would be fully remedied by an order that declared the Interim Estimates to be nonbinding. Yet the injunction, rather than restoring agencies’ discretion, imposes its own approach to regulatory analysis, requiring adherence to specific discount rates (3% and 7%) and forbidding agencies from considering the global

impacts of GHG emissions. That judicially prescribed, one-size-fits-all approach—which, unlike E.O. 13990, leaves no room for compliance with contrary statutory directives—commits the very error that Plaintiffs (wrongly) attribute to the Interim Estimates.

The injunction is similarly illogical in mandating a “return to the guidance of Circular A-4.” Order 2. Circular A-4 is an advisory guidance document, not mandated by any statute, used for intra-Executive-Branch regulatory analysis. It is unprecedented for a federal court to direct an agency to adhere to it, much less to a particular (mis)interpretation of its terms. Indeed, Circular A-4 does not require exclusive focus on the discount rates or geographic scope that the injunction now mandates. It instead contemplates that agencies may consider global costs and benefits and expressly encourages use of lower discount rates to account for intergenerational-equity concerns. *See Circular A-4* at 15, 35-36.

Moreover, by enjoining Defendants from “implementing Section 5 of Executive Order 13990 in any manner,” Order 2, the injunction shuts down an interagency Working Group established by the President to advise him on important empirical and policy questions. Plaintiffs have never asserted any harm from the Working Group’s general operation, its public consultations

(in which Plaintiffs have participated), or any other action aside from issuance of the Interim Estimates. Yet the injunction suspends the Working Group, in stark disregard of the President’s Article II authority to supervise and seek advice from his subordinates. *See* U.S. Const. art. II, §§ 1-2.

Finally, the injunction conflicts with other federal court decisions. The Seventh Circuit has held that the Department of Energy acted reasonably in considering global effects: because “climate change ‘involves a global externality’ those global effects are an appropriate consideration when looking at a national policy.” *Zero Zone*, 832 F.3d at 679. And in another suit—in which Wyoming (a plaintiff here) intervened—the court set aside an agency rule that “focus[ed] solely on domestic effects” to the exclusion of, *inter alia*, “impacts on 8 million United States citizens living abroad.” *California v. Bernhardt*, 472 F. Supp. 3d 573, 613 (N.D. Cal. 2020). The injunction here would override those decisions *sub silentio*.

III. EQUITABLE FACTORS OVERWHELMINGLY FAVOR A STAY

The district court’s injunction presents clear and irreparable harm to Defendants and the public interest. *Nken*, 556 U.S. at 435. As discussed at length in the attached Declaration of Dominic Mancini, OIRA Deputy Administrator, the injunction’s effects have already reverberated across the

Executive Branch, including to work supporting the President’s foreign-affairs functions. At numerous agencies, work surrounding various public-facing rules, grants, leases, permits, and other projects—including potential oil-and-gas projects in Louisiana—has been delayed or stopped altogether. In some cases, missed statutory deadlines may preclude agencies’ ability to act at all. Even some internal discussions have halted, lest they run afoul of the injunction’s prohibition against “relying upon” Working Group materials “in any manner.” Order 2. The inability of the President and federal officials to carry out their public duties clearly constitutes “irreparable injury.” *Cf. E.T. v. Paxton*, 19 F.4th 760, 769-70 (5th Cir. 2021).

That the injunction does not simply restore the pre-January 2021 state of affairs, but instead “judicial[ly] alter[s] the status quo” by mandating adherence to particular regulatory-analysis principles, further weighs in favor of a stay. *Freedom From Religion Found. v. Mack*, 4 F.4th 306, 316 (5th Cir. 2021). So, too, does Plaintiffs’ many-month delay in seeking injunctive relief in the first place. *See Benisek v. Lamone*, 138 S. Ct. 1942, 1944 (2018) (per curiam). If this Court does not direct dismissal altogether, *cf. Barber*, 860 F.3d at 357, it should at least halt Plaintiffs’ effort to judicially micromanage the Executive Branch’s operations via injunction.

CONCLUSION

This Court should immediately stay the preliminary injunction, or at a minimum, grant a partial stay.

Respectfully submitted,

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MARCH 2022

CERTIFICATE OF COMPLIANCE

I hereby certify that this motion complies with the requirements of Federal Rule of Appellate Procedure 27(d) because it has been prepared in 14-point CenturyExpd BT, a proportionally spaced font. I further certify that this motion complies with the type-volume limitation of Federal Rule of Appellate Procedure 27(d)(2) because it contains 5,198 words, according to the count of Microsoft Word.

I further certify that this emergency motion complies with the requirements of 5th Cir. R. 27.3 because it was preceded by telephone calls to the Clerk's Office on February 28, 2022 and to the offices of opposing counsel on February 28, 2022, advising of the intent to file this emergency motion. I further certify that the facts supporting emergency consideration of this motion are true and complete.

/s/ Jeffrey E. Sandberg
Jeffrey E. Sandberg
Counsel for Defendants-Appellants

CERTIFICATE OF SERVICE

I hereby certify that, on March 1, 2022, I electronically filed the foregoing emergency motion for stay pending appeal with the Clerk of Court by using the appellate CM/ECF system. I further certify that the participants in the case are CM/ECF users and that service will be accomplished by using the appellate CM/ECF system.

/s/ Jeffrey E. Sandberg

Jeffrey E. Sandberg
Counsel for Defendants-Appellants

Exhibit A

**UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF LOUISIANA
LAKE CHARLES DIVISION**

STATE OF LOUISIANA ET AL

CASE NO. 2:21-CV-01074

VERSUS

JUDGE JAMES D. CAIN, JR.

JOSEPH R BIDEN JR ET AL

MAGISTRATE JUDGE KAY

MEMORANDUM RULING

Before the Court is a “Motion for Preliminary Injunction” (Doc. 53) filed by the States of Louisiana, Alabama, Florida, Georgia, Kentucky, Mississippi, South Dakota, Texas, West Virginia, and Wyoming (collectively referred to as the “Plaintiff States”). The Plaintiff States move pursuant to Rule 65 of the Federal Rules of Civil Procedure for a preliminary injunction against Defendants Joseph R. Biden, Jr., Cecilia Rouse, Shalanda Young, Kei Koizumi, Janet Yellen, Deb Haaland, Tom Vilsack, Gina Raimondo, Xavier Becerra, Pete Buttigieg, Jennifer Granholm, Brenda Mallory, Michael S. Regan, Gina McCarthy, Brian Deese, Jack Danielson, U.S. Environmental Protection Agency, U.S. Department of Energy, U.S. Department of Transportation, U.S. Department of Agriculture, U.S. Department of Interior, National Highway Traffic Safety Administration, and the Interagency Working Group on Social Cost of Greenhouse Gases (hereinafter collectively referred to as “Defendants”).

Plaintiff States also move to make the Order effective immediately and to remain in effect pending the final resolution of this case, or until further orders of this Court, the United States Court of Appeals for the Fifth Circuit, or the United States Supreme Court.

I. BACKGROUND

On April 22, 2021, the Plaintiff States filed a Complaint [doc. 1] against the Government Defendants seeking declaratory and injunctive relief as a result of Executive Order 13990 (“EO 13990”). EO 13990 reinstated the Interagency Working Group (“IWG”) on Social Costs of Greenhouse Gas Emissions (“SC-GGE”) and ordered the IWG to publish Interim Estimates for the Social Cost of Carbon, Nitrous Oxide, and Methane (collectively referred to as “SC-GHG Estimates”) for agencies to use when monetizing the value of changes in greenhouse gas emissions resulting from regulations and other relevant agency actions. EO 13990 provides as follows:

Accounting for the Benefits of Reducing Climate Pollution

- (a) It is essential that agencies capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account. Doing so facilitates sound decision-making, recognizes the breadth of climate impacts, and supports the international leadership of the United States on climate issues. The “social cost of carbon” (SCC), social cost of nitrous oxide” (SCN), and “social cost of methane” (SCM) are estimates of the monetized damages associated with incremental increases in greenhouse gas emissions. They are intended to include changes in net agricultural productivity, human health, property damage from increased flood risk, and the value of ecosystem services. An accurate social cost is essential for agencies to accurately determine the social benefits of reducing greenhouse gas emissions when conducting cost-benefit analyses of regulatory and other actions.
- (b) There is hereby established an Interagency Working Group on the Social Cost of Greenhouse Gases (the “Working Group”). The Chair of the Council of Economic Advisers, Director of OMB, and Director of the office of Science and Technology Policy shall serve as Co-Chairs of the Working Group.
 - (i) **Membership.** The Working Group shall also include the following other officers, or their designees: the Secretary of the Treasury; the Secretary of the Interior; the Secretary of Agriculture; the Secretary of Commerce; the Secretary of Health and Human Services; the Secretary of Transportation; the Secretary of Energy; the Chair of the Council on

Environmental Quality; the Administrator of the Environmental Protection Agency; the Assistant to the President and National Climate advisor; and the Assistant to the President for Economic Policy and director of the National Economic council.

- (ii) Mission and Work. The Working Group shall, as appropriate and consistent with applicable law:
 - (A) Publish an interim SCC, SCN, and SCM within 30 days of the date of this order, which agencies shall use when monetizing the value of changes in greenhouse gas emissions resulting from regulations and other relevant agency actions until final values are published;
 - (B) Publish a final SCC, SCN, and SCM by no later than January 2022;
 - (C) Provide recommendations to the President, by no later than September 1, 2021, regarding areas of decisions-making, budgeting, and procurement by the Federal Government where the SCC, SCN, and SCM should be applied;
 - (D) Provide recommendations, by no later than June 1, 2022, regarding a process for reviewing, and, as appropriate, updating, the SCC, SCN, and SCM to ensure that these costs are based on the best available economics and science; and
 - (E) Provide recommendations, to be published with the final SCC, SCN, and SCM under subparagraph (A) if feasible, and in any event by no later than June 1, 2022, to revise methodologies for calculating the SCC, SCN, and SCM, to the extent that current methodologies do not adequately take account of climate risk, environmental justice, and intergenerational equity.

(iii) Methodology. In carrying out its activities, the working Group shall consider the recommendations of the National Academies of Science, Engineering, and Medicine as reported in Value Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide (2017) and other pertinent scientific literature; solicit public comment; engage with the public and stakeholders; seek the advice of ethics experts; and ensure that the SCC, SCN, and SCM reflect the interests of future generations in avoiding threats posed by climate change.

1. ISSUES BEFORE THE COURT

The Plaintiff States seek injunctive and declaratory relief on three grounds. First, they assert that the SC-GHG Estimates violate the procedural requirements of the Administrative Procedure Act (“APA”) as a substantive rule that did not undergo the requisite notice-and-comment process. *See* 5 U.S.C. § 553. Second, the Plaintiff States claim that President Biden, through EO 13990, and the IWG lack the authority to enforce the estimates as they are substantively unlawful under the APA and contravene existing law. *See* 5 U.S.C. § 706(2)(A)–(C). Third, the Plaintiff States maintain that the Government Defendants acted beyond any congressional authority by basing regulatory policy upon global considerations.

The Plaintiff States request a preliminary injunction: (1) ordering Defendants to disregard the SC-GHG Estimates and prohibiting them from adopting, employing, treating as binding, or relying upon the work product of the Interagency Working Group (“IWG”); (2) enjoining Defendants from independently relying upon the IWG’s methodology considering global effects, discount rates, and time horizons; and (3) ordering Defendants to return to the guidance of Circular A-4, *explained infra*, in conducting regulatory analysis.

The issues presently before the Court are: (1) whether the Plaintiff States satisfy the doctrine of standing; (2) whether the Plaintiff States assert claims subject to judicial review under the APA; and (3) whether the Plaintiff States satisfy the requirements to obtain a preliminary injunction.

To be clear, the Court is ruling only on the actions of the federal agencies and whether the agencies, by implementing the estimates and considering global effects—violate the APA and whether President Biden upon signing EO 13990, violated the separations of powers clause of the United States Constitution. The Court has the authority to enjoin federal agencies from implementing a rule—mandated by an executive order or not—that violates the APA or violates the separation of powers clause. Importantly, the Court is not opining as to the scientific issues regarding greenhouse gas emissions, their effects on the environment, or whether they contribute to global warming.

2. HISTORY OF THE ADMINISTRATIVE PROCEDURE ACT AND CIRCULAR A-4

(i) The Administrative Procedure Act and Circular A-4

The Administrative Procedure Act (“APA”) is one of the foremost checks on the “growth of the Executive Branch [.]” *Free Enterprise Fund v. Pub. Co. Accounting Oversight Bd.*, 561 U.S. 477, 499 (2010). The APA mandates that agencies take action only pursuant to express legal authority, in a transparent manner, with opportunity for public input, in a nonarbitrary manner, and with judicial review. See *Texas v. U.S.*, 809 F.3d 134 (5th Cir. 2015).

Another check on the growth of the Administrative State is the consensus on cost/benefits analysis required by Presidents Nixon, Ford, Carter, Reagan and Clinton. See Nina A. Mendelson & Jonathan B. Wiener, *Responding to Agency Avoidance of OIRA*, 37 Harv. J.L. & Pub. Pol’y 447, 454–57 (2014). President Clinton issued Executive Order 12866, which instructs agencies to “assess all costs and benefits of available regulatory

alternatives, including the alternative of not regulating” when “deciding whether and how to regulate.”¹

In 2003, President George W. Bush’s Office of Management and Budget issued Circular A-4 to implement EO 12866 and ensure agencies use a “standardiz[ed]” way of “measur[ing] and report[ing]” the “benefits and costs of Federal regulatory actions.”² Circular A-4 has become the cornerstone of regulatory analysis in the Executive Branch.³

Circular A-4 provides “highly detailed guidance to the agencies on the key elements of a ‘good regulatory analysis’ under EO 12866—specifically it includes a clear baseline for comparative purposes, specifically states assumptions, an assessment of the sensitivity of the analytical results to changes in those assumptions, and attention to ancillary impacts.” Mendelson & Wiener, *supra*, at 457—58. Relevant to this litigation, Circular A-4 contains two key instructions: (1) agencies are to use both 3 and 7 percent discount rates when conducting regulatory cost/benefit analysis; and (2) agencies are to consider domestic, rather than global, costs and benefits.⁴

Discount factors are used to adjust the estimated benefits and costs for differences in timing. The further in the future the benefits and costs are expected to occur, the more they should be discounted.⁵ “When, and only when, the estimated benefits and costs have been discounted, they can be added to determine the overall value of net benefits.”⁶

¹ Plaintiffs’ exhibit 1 attached to St. John Declaration Doc. 55.

² *Id.* attached as exhibit 5, Circular A-4, p. 1.

³ Anne E. Smith, Ph.D. Declaration, ¶¶ 18-19, Doc. 56.

⁴ Plaintiff’s exhibit 5, Circular A-4.

⁵ *Id.* p. 32.

⁶ *Id.*

Prior to Circular A-4, the Executive Branch used a 7 percent discount rate because it “reflects the returns to real estate and small business capital as well as corporate capital”⁷ and “approximates the opportunity cost of capital, and it is the appropriate discount rate whenever the main effect of a regulation is to displace or alter the use of capital in the private sector.”⁸ In certain circumstances a lower discount rate may be appropriate, therefore Circular A-4 instructs agencies to “provide estimates of net benefits using both 3 and 7 percent.”⁹

The second instruction in Circular A-4 requires agencies to make domestic effects the basis of their analysis.¹⁰ See *Wyoming v. United States Dep’t of the Interior*, 2020 WL 7641067 at *21 (D. Wyo. Oct. 8, 2020) (noting that Circular A-4 mandates a national focus): *States v. Bureau of Land Mgmt.*, 286 F.Supp.3d 1054, 1069 (N.D. Cal. 2018) (“While Plaintiff argue that the same Circular directs BLM to encompass ‘all the important benefits and costs likely to result from the rule,’ including ‘any important ancillary benefits,’ it does not specifically mandate that agencies consider global impacts.”)

(ii) The Social Cost of Greenhouse Gases

Carbon dioxide, methane, and nitrous oxide, also referred to as greenhouse gases¹¹ are ever-present byproducts that are produced by activity from energy production to agriculture to waste disposal.

⁷ *Id.*

⁸ *Id.*

⁹ *Id.* at p. 34.

¹⁰ “Your analysis should focus on benefits and costs that accrue to citizens and residents of the United States. Where you choose to evaluate a regulation that is likely to have effects beyond the borders of the United States, these effects should be reported separately.” *Id.* at p. 15.

¹¹ Gases that trap heat in the atmosphere are called greenhouse gases. Exhibit 42 attached to Plaintiffs’ exhibit 1, p. 2, St. John Declaration. Doc. 55-42.

Carbon dioxide is produced from burning fossils fuels such as coal, natural gas, and oil, and solid wastes, trees, chemical reactions,¹² and other biological materials.¹³ Carbon dioxide is removed from the atmosphere when it is absorbed by plants as part of the biological carbon cycle.¹⁴

Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices, land use and by the decay of organic waste in municipal solid waste landfills.¹⁵

Nitrous oxide is emitted during agricultural practices, land use, industrial activities, combustion of fossil fuels and solid waste, as well as during treatment of wastewater.¹⁶

Fluorinated gases include hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride. They are synthetic, powerful greenhouse gases emitted from a variety of industrial process. These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential (“High GWP gases”).¹⁷

Each gas’s effect on climate change depends upon: (1) how much is in the atmosphere; (2) how long they stay in the atmosphere; and (3) how strongly they impact the atmosphere.¹⁸

¹² E.g., manufacture of cement.

¹³ Exhibit 42 attached to Plaintiffs’ exhibit 1, St. John Declaration.

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ *Id.*

(iii) President Obama's role

In 2009, President Obama convened an Interagency Working Group (“IWG”) to establish estimates of the social cost of carbon (“SCC”) that all agencies must use in their regulatory cost/benefit analysis. In the Spring of 2010, the IWG presented final SCC estimates which purported to use Circular A-4 as its starting point but rejected two of its fundamental tenets—the 3 and 7 percent discount rates, and the domestic effects as the basis of their analysis. In 2016, the IWG issued estimates for the Social Cost of Methane (“SCM”) and the Social Cost of Nitrous Oxide (“SCN”).

The IWG established by the Obama administration was dismantled by the Trump administration,¹⁹ and reinstated by the Biden administration through Executive Order 13990, issued on January 20, 2021.

(iv) President Biden's Executive Order 13990

On January 20, 2021, President Biden issued Executive Order 13990. 86 Fed. Reg. 7037 (Jan. 20, 2021). Section 5 of EO 13990 directs federal agencies to “capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account.” 86 Fed. Reg. at 7040. Section 5(b)(ii)(A) further provides that “the Working Group shall . . . publish an interim SCC, SCN, and SCM within 30 days of the date of this order, which agencies shall use when monetizing the value of changes in

¹⁹ In 2017, the Trump administration disbanded the IWG, rescinded its technical support documents, and directed agencies to return to Circular A-4's guidance when analyzing the value of changes in greenhouse gas emissions. Exec. Order No. 13783, 82 Fed. Reg. 16093 (Mar. 28, 2017).

greenhouse gas emissions resulting from regulations and other relevant agency actions until final values are published.” Exec. Order No. 13990, 86 Fed. Reg. 7037, 7040 (Jan. 20, 2021).

On February 26, 2021, the IWG announced the SC-GHG Estimates as directed by EO 13990 (“Current SC-GHG Estimates”). The Current SC-GHG Estimates are identical to those issued by the Obama Administration in the 2016 Technical Support Document and addendum, adjusted for inflation.

(v) Relief sought

Plaintiff States move to enjoin and restrain Defendants from:

- (1) Adopting, employing, treating as binding, or relying upon the work product of the Interagency Working Group, including without limitation, any and all Social Cost of Greenhouse Gas estimates published by the Interagency Working Group;
- (2) Adopting, employing, treating as binding, or relying upon any Social Cost of Greenhouse Gas estimates based on global effects or that otherwise fails to comply with applicable law;
- (3) Adopting, employing, treating as binding, or relying upon any estimate of Social Cost of Greenhouse Gases that does not utilize discount rates of 3 and 7 percent or that otherwise does not comply with Circular A-4; and
- (4) Relying upon or implementing Section 5 of Executive Order 13990 in any manner.

II. STANDING

The Court must first address the threshold question regarding whether the Plaintiff States have standing to bring this suit.

Article III of the Constitution limits the federal courts’ jurisdiction to “Cases” and “Controversies.” *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 559, 112 S. Ct. 2130, (1992). One “essential and unchanging part of the case-or-controversy requirement” is the doctrine of standing. *Id.* at 560. The party invoking federal jurisdiction bears the burden of establishing standing. *See Clapper v. Amnesty Int’l USA*, 568 U.S. 398, 410, 133 S. Ct. 1138, 1148, 185 (2013). “In the preliminary-injunction context, plaintiffs must make a ‘clear showing’ of standing” to obtain relief. *Tex. Democratic Party v. Abbott*, 978 F.3d 168, 178 (5th Cir. 2020) *cert. denied*, 141 S.Ct. 1124 (2021); *see Tex. All. for Retired Ams. v. Hughs*, 976 F.3d 564, 567 n.1. (5th Cir. 2020) (contrasting the ordinary showing of standing as opposed to what is required to maintain a preliminary injunction”). Accordingly, plaintiffs must satisfy the three elements that constitute “the irreducible constitutional minimum of standing”: (1) injury in fact; (2) causal connection (the injury has to be fairly traceable to the challenged action); and (3) redressability (the injury must be likely, as opposed to merely speculative that it will be redressed by a favorable decision). *Lujan*, 504 U.S. at 560. “[T]he presence of one party with standing is sufficient to satisfy Article III’s case-or-controversy requirement.” *Rumsfeld v. Forum for Acad. & Institutional Rights, Inc.*, 547 U.S. 47, 52 n.2, 126 S. Ct. 1297 (2006). Yet, “a plaintiff must demonstrate standing for each claim he seeks to press and for each form of relief that is

sought.” *Town of Chester v. Laroe Estates, Inc.*, __ U.S. __, 137 S. Ct. 1645, 1650 (2017) (citation omitted).

Importantly, “states are not normal litigants for the purposes of invoking federal jurisdiction.” *Massachusetts v. EPA*, 549 U.S. 497, 526, 127 S. Ct. 1438 (2007). Accordingly, the presumption of “special solicitude” may be available to a state “exercising a procedural right created by Congress and protecting a quasi-sovereign interest.” *Texas v. United States*, 809 F.3d 134, 162 (5th Cir. 2015).

1. Injury in fact

To satisfy the injury-in-fact requirement, the Plaintiffs must show that they “suffered ‘an invasion of a legally protected interest’ that is ‘concrete and particularized’ and ‘actual or imminent, not conjectural and hypothetical.’” *Spokeo, Inc. v. Robins*, 578 U.S. 856, 136 S. Ct. 1540, 1548 (2016) (quoting *Lujan*, 504 U.S. at 560. Allegations of “future injury may suffice if the threatened injury is ‘certainly impending’ or there is a ‘substantial risk’ that the harm will occur.” *Susan B. Anthony List v. Driehaus*, 573 U.S. 149, 158, 134 S. Ct. 2334 (quoting *Clapper v. Amnesty Int’l USA*, 568 U.S. 398, 414 n.5, 133 S. Ct. 1138 (2013)).

Plaintiff States allege direct injury to their sovereign, fiscal, procedural, and *parens patriae* interests. As to their sovereign interests, Plaintiff States claim that they are directly injured by the Government Defendants’ alteration of cooperative federalism programs. Specifically, they contend that the SC-GHG Estimates impose new obligations on them when they *participate in* cooperative federalism programs. The Fifth Circuit has recognized that this type of “increased regulatory burden typically satisfies the injury in

fact requirement.” *Contender Farms, L.L.P. v. U.S. Dep’t of Agric.*, 779 F.3d 258, 266 (5th Cir. 2015).

To establish direct injury, Plaintiff States assert that: (1) they are substantial producers of energy and rely upon tax revenue from energy production to perform their sovereign duties; (2) the SC-GHG Estimates will impose additional duties upon Plaintiff States when they implement cooperative federalism programs; and (3) the SC-GHG Estimates will harm Plaintiff States’ ability to purchase affordable energy to carry out their sovereign functions.

Plaintiffs States argue that the increased SC-GHG Estimates will necessarily cause regulatory standards for air quality, energy efficiency, and power plant regulation to become more stringent and result in significant costs increases.²⁰ Moreover, this increased stringency will directly harm the economies and revenues of Plaintiff States.

For example, the SC-GHG Estimates will directly harm Louisiana’s energy, chemical manufacturing, and agricultural industries by increasing their regulatory burdens and driving up the price of electricity that these businesses need to stay in business and continue to employ Louisianians and contribute to tax revenues.²¹ The SC-GHG Estimates will harm Louisiana, the nation’s number two oil producer and a top five national natural

²⁰ See Smith Decl. ¶¶ 85092; Dismukes Decl. ¶ 23 (“The use of unsupported SC-GHG estimates in NEPA and other regulatory analysis will result in the approval of new regulations that will impose significant costs on Louisiana’s economy and business that are not justified by an accurate assessment of their costs and benefits.”)

²¹ Dismukes Decl. ¶¶ 22-26.

gas producer,²² resulting in significantly reduced royalties from leasing sales under Outer Continental Shelf Act (“OCSLA”).

The SC-GHG will directly harm Kentucky’s economic welfare,²³ as demonstrated by the Obama Administration’s SCC-justified Clean Power Plan by making a new CPP justifiable under cost/benefit analysis principles. The SC-GHG will harm Alabama’s ability to exploit its energy resources and harm its industrial sector, and Florida’s tourism industry by driving up the transportation costs and energy prices.²⁴

Plaintiff States also allege that the SC-GHG Estimates impose additional duties on them when *carrying out* cooperative federalism programs because they are compelled to employ the IWG’s methodology as a condition of approving significant funding and State environmental implementation plans. For example, states must comply with federal standards in programs such as the National Ambient Air Quality Standards (“NAAQS”), 42 U.S.C. § 7410. Under that statute, it is the states’ burden “to propose plans adequate for compliance with NAAQS.” *E.P.A. v. EME Homer City Generation, L.P.*, 572 U.S. 489, 498, 134 S. Ct. 1584 (2014). Plaintiff States assert that the EPA has instructed that NAAQS are now required to be set based on the IWG’s SC-GHG Estimates.²⁵ Likewise, the states must use the SC-GHG Estimates or risk having their state implementation plans disapproved. Yet, even if a state implementation plan is disapproved by the EPA, the EPA

²² See U.S. Energy Info. Admin., “Louisiana: State Profile and Energy Estimates” (updated Apr. 15, 2021). (St. John Decl. Ex. 30).

²³ Kentucky is one of the top coal-producing states. See U.S. Energy Information Administration, “Coal FAQ” (St. John Decl. Ex. 32).

²⁴ See U.S. Energy Info. Admin., “Florida: State Profile and Energy Estimates” (updated Nov. 19, 2020) (St. John Decl. Ex. 33).

²⁵ See Doc. 1 at 45–46, ¶124.

will impose a federal implementation plan upon the state—which also must be based upon the SC-GHG Estimates.²⁶

Defendants challenge Plaintiff States assertion of the use of the SC-GHG Estimates by the NAAQS, and argue that there are no NAAQS for greenhouse gases, *see Utility Air Regul. Grp. v. EPA*, 573 U.S. 302, 308 (2014) (listing the “six pollutants” for which “EPA has issued NAAQS”). Plaintiff States offer no explanation of how the SC-GHG Estimates would be used in setting or revising NAAQS for non-greenhouse-gas pollutants.

The SC-GHG Estimates will directly harm Georgia’s industrial sector by increasing stationary source regulatory stringency.²⁷ The SC-GHG Estimates will directly harm Mississippi’s energy infrastructure including its petroleum refinery, natural gas processing plant and LNG terminal.²⁸ The SC-GHG Estimates will directly harm South Dakota’s industrial and agricultural capacities.²⁹ The SC-GHG Estimates will directly harm Texas, the nation’s leading energy producer.³⁰ The SC-GHG Estimates will be fatal to West Virginia’s economy, the fifth-largest energy producer in the nation—specifically its coal industry as realized by the Obama administration’s CPP.³¹ The SC-GHG will directly harm

²⁶ Doc. 1 at 45–46, ¶¶123–125.

²⁷ See U.S. Energy Info. Admin., Georgia: State Profile and Energy Estimates” (updated Nov. 19, 2020) (St. John Decl. Ex. 34).

²⁸ See U.S. Energy Info. Admin., “Mississippi: State Profile and Energy Estimates” (updated July 16, 2020) (St. John Decl. Ex. 35).

²⁹ See U.S. Energy Info. Admin., South Dakota: State Profile and Energy Estimates” (updated Apr. 16, 2020) (St. John Decl. Ex. 36).

³⁰ See U.S. Energy Info. Admin., “Texas: State Profile and Energy Estimates” (updated Apr. 15, 2021) (St. John Decl. Ex. 37).

³¹ See U.S. Energy Info. Admin., “West Virginia: State Profile and Energy Estimates” (updated Oct. 15, 2020) (St. John Decl. Ex. 38).

Wyoming, the largest net energy supplier in the nation and a major producer of coal, natural gas, and oil.³²

The Plaintiff States argue that the harms to these States are imminent and directly traceable to EO 13990 and the SC-GHG Estimates. The Plaintiff States remark that the chain of causation is clear and confirmed by history: agencies will apply EO 13990's unambiguous command to apply the IWG's unlawful SC-GHG Estimates in a manner that will harm Plaintiff States' legally cognizable interests.

Defendants maintain that Plaintiff States have failed to affirmatively show an Article III injury to establish standing. Plaintiff States insist that the Executive Branch is employing the SC-GHG Estimates in a range of rulemaking across statutory regimes. Plaintiff States provide the following examples of final rules using the SC-GHG to increase costs in various industries:

- EPA, *Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards*, 86 Fed. Reg. 74434 (Dec. 30, 2021).³³ Defendants remark that EPA explained that it “is not required to conduct formal costs benefit analysis to determine the appropriate standard under Section 202” of the Clean Air Act, and that “analysis of monetized GHG was not material to its decision. In summation, “the decisions reached and standards put in place do not depend on the 2021 SC-GHG interim estimates.” EPA, *Revised 2023 and Later Model Year Light-Duty Vehicle GHG Emissions Standards: Response to Comments* (Dec. 2021), <https://perma.cc/RX8S-FFPJ>.
- DOE, *General Service Lamps*, 86 Fed. Reg. 70755 (Dec. 13, 2021).³⁴

³² See U.S. Energy Info. Admin., “Wyoming: State Profile and Energy Estimates” (updated Mar. 18, 2021) (St. John Decl. Ex. 39).

³³ Plaintiff's exhibit 1, Daigle Decl. (This rule will impose unprecedented costs on the American auto industry; specifically, the EPA's estimate of benefits “include[d] climate-related economic benefits from reducing emissions of GHG's that contribute to climate change” based on the SC-GHG Estimates). *Id.* at 74443.

³⁴ Plaintiffs' exhibit 2, Daigle Decl. at 70768. (This proposed rule employs the SC-GHG Estimates in calculating benefits).

- EPA, *Oil and Gas New Modified Sources*, 86 Fed. Reg. 63110 (Nov. 15, 2021).³⁵
- Bureau of Land Management (BLM), *Fact Sheet: analyzing the effects of fossil fuel leasing and development on greenhouse gases* (Oct. 29, 2021).³⁶
- DOE, *Manufactured Housing*, 86 Fed. Reg. 59042 (October 26, 2021).³⁷
- Federal Acquisition Regulatory Council (FAR), *Minimizing Climate Change in Federal Acquisitions*, 86 Fed. Reg. 57404 (October 15, 2021).³⁸
- Council on Environmental Quality (CEQ), *NEPA Implementing Regulations Revisions*, 86 Fed. Reg. 55757 (Oct. 7, 2021).³⁹
- EPA, *Phasedown of Hydrofluorocarbons*, 86 Fed. Reg. 55116 (Oct. 5, 2021).⁴⁰
Defendants contend that EPA did not rely on the SC-GHG Estimates, and the proposed rule explained that it would implement an explicit congressional command in the American Innovation and Manufacturing Act of 2020, Pub. L. No. 116–260, 134 Stat. 1182 (codified at 42 U.S.C. § 7675), which “directs EPA to address HFCs by providing new authorities” to “phase down the production and consumption of listed HFCs” on a “schedule prescribed by Congress.” 86 Fed.Reg. at 27,153, 27,159.

The Court is concerned that Defendants’ arguments are somewhat misleading considering that the following statement is made in the *Regulatory Impact*

³⁵ Plaintiffs’ exhibit 3, Daigle Decl. (EPA uses SC-GHG Estimates in proposing stricter standards on GHG emissions for the oil and gas industry; the effect is billions of dollars of compliance costs).

³⁶ Plaintiffs’ exhibit 4, Daigle Decl. (The BLM issues a fact sheet and announced a “[s]tandardized methodology for consideration of the social cost of greenhouse gases in lease sales.” *Id.*, at 1. The fact sheet relies on the SC-GHG Estimates and the Executive Order—“BLM’s analysis uses the interim estimates of the social costs of carbon, methane and nitrous oxide published by the IWG in February 2021.” *Id.* at 2.

³⁷ Plaintiffs’ exhibit 5. (DOE explicitly relies on the Executive Order and Estimates in determining whether the rule is justified; “DOE calculates the value of the reduced emissions of CO₂, CH₄, and N₂O (collectively, greenhouse gases of GHGs) using a range of values per metric ton of pollutant, consistent with the interim estimates issued in February 2021 under Executive Order 13990.”) *Id.* at 59043.

³⁸ Plaintiffs’ exhibit 6, Daigle Decl. (FAR released an advanced notice of proposed rulemaking stating that it is considering the SC-GHG Estimates in promulgating a new regulation that would evaluate federal acquisition contracts based on the IWG’s SC-GHG Estimates.) *Id.* at 57405.

³⁹ Plaintiffs’ exhibit 7. (CEQ issued a proposed rule repealing the previous Administration’s final NEPA implementation-regulation revisions. The proposed rule specifically directs agencies to use the SC-GHG Estimates. *Id.* at 55763, n.5.)

⁴⁰ Plaintiffs’ exhibit 8. (EPA issued a final rule seeking to phase down hydrofluorocarbons (“HFCs”) which imposes massively increased regulatory costs on the myriad of products that rely on HFCs, including refrigeration, air-conditioning, building insulation, and aerosols. The EPA relied on the same models, methodologies, and assumptions as the Working Group’s SC-GHG Estimates, and specifically cited the Working Group’s “interim” Technical Support Documents as authority. See, e.g., 86 Fed. Reg. at 55119; see also EPA, *Regulatory Impact Analysis for Phasing Down Production and Consumption of Hydrofluorocarbons (HFCs)* at 103-15 (Sept. 2021), Plaintiffs’ exhibit 9, Daigle Decl.

*Analysis for Phasing Down Production and Consumption of Hydrofluorocarbons (HFCs),*⁴¹

These SC-HFC estimates were developed using methodologies that are consistent with the methodology underlying the social cost of carbon, methane, and nitrous oxide estimates presented in the Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990 (IWG 2021). The social cost of GHG estimates presented in IWG (2021) are interim values developed under E.O. 13990 for use in benefit-cost analyses until an improved estimate of the impacts of climate change can be developed based on the best available science and economics. Therefore, EPA views the SC-HCF estimates used in analysis to be appropriate for use in benefit-cost analysis until improved estimates of the social cost of other GHGs are developed.⁴²

- National Highway Traffic Safety Administration (NHTSA), *2024-2026 Passenger Cars and Light Trucks Emissions Standards*, 86 Fed. Reg. 49602 (Sept. 3, 2021).⁴³
- Dep’t of the Interiors (DOI), Secretarial Order no. 3399, *Department-Wide Approach to the Climate Crisis and Restoring Transparency and Integrity to the Decisions-Making Process* (April 16, 2021).⁴⁴

Plaintiff States maintain that: (1) the FAR Climate rule will directly harm Plaintiff States’ ability to contract with the federal government; (2) the vehicle regulations will increase the prices Plaintiff States must pay for vehicles for official use; (3) CEQ’s NEPA regulation revisions will harm Plaintiff States in their sovereign capacity by pressuring them to change their approach to NEPA analysis in their capacity as joint lead agencies; (4) DOI and BLM’s activities are depressing the Plaintiff States’ statutorily entitled

⁴¹ Doc. 91-11.

⁴² *Id.* at p. 104.

⁴³ Plaintiffs’ exhibit 10, Daigle Decl. (NHTSA used SC-GHG estimates to calculate and include “benefits” of reduced GHG emissions in a proposed rulemaking to impose more costly and burdensome fuel economy standards).

⁴⁴ Doc. 55-28. (Secretary of the DOI issues an order directing agencies, including BLM and the Bureau of Ocean Energy Management (BOEM) to employ the SC-GHG Estimates as “an essential tool” in their cost-benefit analysis whenever they “determine[] that a monetized assessment of socioeconomic impacts is relevant” specifically citing EO 13990.*Id.* at 1 and 4).

proceeds from lease sales and production by artificially reducing both the number of parcels available and the activities that can be conducted on those parcels.

Plaintiff States have submitted evidence to posit that the SC-GHG Estimates are currently in use in NEPA analyses. Examples include the following:

- Department of Transportation, Maritime Administration, *Bluewater Texas Terminal Deepwater Port Project Draft Environmental Impact Statement* (Oct. 2021).⁴⁵
- Bureau of Land Management (BLM), *Wyoming First Quarter Oil and Gas Lease Sale Environmental Analysis* (Nov. 1, 2021).⁴⁶
- BLM, *Utah First Quarter Oil and Gas Lease Sale Environmental Analysis* (Nov. 1, 2021).⁴⁷
- DOE, *Notice of Intent to Prepare a Supplemental Environmental Impact Statement for the Alaska LNG Project*, 86 Fed. Reg. 35280 (July 2, 2021).⁴⁸

First, the Plaintiff States have asserted a concrete and particularized injury: mandatory implementation of the SC-GHG Estimates imposes new obligations on the states and increases regulatory burdens when they participate in cooperative federalism

⁴⁵ Plaintiffs' exhibit 11, Daigle Decl. (DOT used the SC-GHG Estimates to examine the Bluewater Texas Deepwater port project in the draft environmental impact statement, in both the constructions and emissions phases of the project.). *Id.* at 3-323.

⁴⁶ Plaintiffs' exhibit 12, Daigle Decl. (BLM used the SC-GHG Estimates in "accordance with th[e] direction" of EO 13990 to estimate staggering cost estimates for holding the lease sale. *Id.* at 34, resulting in a smaller sale causing the States of Wyoming a significant loss of revenue.) See also Nicole Pollack, *Less than half of proposed Wyoming oil and gas leases recommended for upcoming sale*, Casper Star Tribune (Dec. 7, 2021). Plaintiffs' exhibit 13.

⁴⁷ Plaintiffs' exhibit 15 (BLM used the SC-GHG Estimates in analyzing alternative for the First Quarter 2022 Utah oil and gas lease sale held under the MLA.) *Id.* at 40-43.

⁴⁸ Plaintiffs' exhibit 16, Daigle Decl. (In light of E.O. 13990, the Biden Administration reopens a previously granted authorization to Alaska LNG Project LLC "to export LNG produced from Alaska sources to any country with which the United States has not entered into a free trade agreement (FTA) requiring national treatment for trade in natural gas, and with which trade is not prohibited by U.S. law or policy (non-FTA countries.))" *Id.* at 35280. In the order (*Alaska LNG Project LLC, DOE/FE Order No. 3643-B*, FE Docket 14-96-LNG, Order on Rehearing (Apr. 15, 2021) (Plaintiffs' exhibit 17) granting the rehearing, the DOE expressly relied on E.O. 13990 and subsequently issued a notice of intent, citing E.O. 13990 to prepare an entirely new Supplemental Environmental Impact Statement.) 86 Fed. Reg. at 35281.

programs. Second, the Plaintiff States have shown that the alleged injury is both actual and imminent. The injury is “actual” as to the executive agencies that have already employed the SC-GHG Estimates, such as the EPA in disapproving state implementation plans under the NAAQS good neighbor provisions and imposing federal implementation plans on several Plaintiff States including Louisiana, Kentucky, and Texas. 86 Fed. Reg. 23054, 23061 (Apr. 30, 2021). In addition, future injury is imminent and certainly impending because other agencies engaged in cooperative federalism programs with the states are required to employ the SC-GHG Estimates, and as shown by the NAAQS example, the states are confronted with a forced choice: either they employ the Estimates in developing their state implementation plan, or the EPA subjects them to a federal plan based on the SC-GHG Estimates.⁴⁹

To be sure, the Administration’s use of the SC-GHG’s Estimates in NEPA reviews to analyze the climate impact of oil and gas lease sales under the MLA directly causes harm to the Plaintiff States’ statutorily vested rights to proceeds from MLA oil and gas leases. In other words, the SC-GHG Estimates artificially increase the cost estimates of lease sales, which in effect, reduces the number of parcels being leased, resulting in the States receiving less in bonus bids, ground rents, and production royalties.

Plaintiff States suggest that the EPA’s mandate that the FERC use the SC-GHG Estimates has caused significant delays in project approvals causing the Plaintiff States to lose property tax revenues.⁵⁰

⁴⁹ 86 Fed. Reg. 23054, 23061, 23153-155.

⁵⁰ Plaintiffs’ exhibit 24, Daigle Dec., Columbia Gulf Transmissions, LLC, Resource Report 5: Socioeconomics, East Lateral Express Project at 5-9 to 5-12, Docket No. CP20-527-000 (Sept. 24, 2020).

The Court is persuaded that the Biden Administration’s agencies are using the SC-GHG. The Court finds that the Plaintiff States have established injury-in-fact.

2. Causal link

To establish causation, the plaintiffs must demonstrate that the injury is “fairly traceable” to the challenged conduct of the defendant rather than the result of “the independent action of some third party not before the court.” *Lujan*, 504 U.S. at 560, (quoting *Simon v. Eastern Ky. Welfare Rights Organization*, 426 U.S. 26, 41–42, 96 S. Ct. 1917, 1926 (1976)).

Defendants argue that because Plaintiff States’ alleged harm is so speculative, one cannot know in advance whether that harm would have any causal connection to E.O. 13990 or the SC-GHG Estimates. In other words, there is no way to predict how the SC-GHG Estimates will affect an agency’s analysis. The Court respectfully disagrees. Plaintiff States have clearly established that: (1) the SC-GHG Estimates create a new cost measure the Plaintiff States must use when running cooperative federalism programs or risk serious consequences; (2) the SC-GHG Estimates significantly increase cost numbers that directly harm Plaintiffs’ revenues; (3) the Plaintiff States have been deprived of the right to submit comments which prevented Plaintiff States from raising important reliance interests and other flaws that directly affect the States; and (4) the SC-GHG Estimates create a new GHG cost measure that agencies must use in their regulatory actions that has caused greater regulatory burdens and harm to Plaintiff States’ citizens’ economic well-being.

The Court is persuaded that the SC-GHG Estimates are being applied and are increasing regulatory costs. Thus, Plaintiff States have met their burden of alleging that

their injury is “fairly traceable” to the challenged act. *Jindal v. U.S. Dep’t of Educ.*, 2015 WL 854132, at *5 (M.D. La. Feb. 26, 2015).

3. Redressability

Lastly, the doctrine of standing demands that it “be ‘likely,’ as opposed to merely ‘speculative,’ that the injury will be ‘redressed by a favorable decision.’” *Lujan*, 504 U.S. at 560 (quoting *Simon v. Eastern Ky. Welfare Rights Organization*, 426 U.S. 26, 38, 96 S. Ct. 1917, 1926, (1976)).

Plaintiff States maintain that an injunction and eventual vacatur will result in the prior regulatory regime based on Circular A-4 to retake effect and redress Plaintiff States’ injury. The Court agrees with Plaintiff States that the remedy they seek will redress their injury.

Plaintiff States also maintain that even if they did not have standing under the traditional analysis, they have standing under “special solicitude.” “States may have standing based on ... federal assertions of authority to regulate matters they believe they control.” *Texas v. United States*, 809 F.3d 134, 153 (5th Cir. 2015). Plaintiff States argue that the SC-GHG Estimates “affect[] the states’ ‘quasi-sovereign’ interests by imposing substantial pressure on them to change their” practices and laws to remain in compliance with federal standards. *Id.* at 153. The Court finds that the Plaintiff States also have standing as they are entitled to special solicitude in the standing inquiry. *See also Texas v. United States* 2021 WL 2096669, at *20 (S.D. Tex. Feb. 23, 2021) (“Although the record demonstrates no express intention of any party to convince Texas to change its detention

or education budgets, the pressure exerted on Texas to reconfigure its budget in those areas is just as ‘direct’ and ‘substantial’ as the pressure on the States in *Texas v. United States.*”)

III. REVIEWABILITY

In addition to finding that the Plaintiff States have standing, the Court must ensure that the asserted claims are reviewable under the APA. The APA provides for judicial review of agency action. *See* 5 U.S.C. § 702. Indeed, there is a “strong presumption” favoring reviewability of administrative action. *Bowen v. Mich. Acad. of Family Phys.*, 476 U.S. 667, 670, 106 S. Ct. 2133 (1986). This review is restricted, however, by four factors. First, the challenged conduct must constitute a “final agency action.” 5 U.S.C. § 704. Second, the states must satisfy the zone-of-interests test. *See Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians v. Patchak*, ___ U.S. ___, 132 S. Ct. 2199, 2210, 183 (2021). Third, the APA makes agency action unreviewable if the organic statute “precludes judicial review.” 5 U.S.C. § 701(a)(1). Fourth, the APA makes agency action unreviewable if the “agency action is committed to agency discretion by law.” 5 U.S.C. § 701(a)(2).⁵¹

The Plaintiff States assert three claims under the Administrative Procedures Act (“APA”). First, they claim that the defendants violated the APA by failing to comply with the notice-and-comment procedures required by 5 U.S.C. § 553. Second, they claim that the Defendants failed to engage in reasoned decision making rendering the SC-GHG Estimates arbitrary and capricious under 5 U.S.C. § 706(2)(A). Third, they claim that the SC-GHG Estimates contravene the Energy Policy and Conservation Act (“EPCA”), Clean

⁵¹ No argument has been made by Defendants as to this criteria, therefore it will not be addressed.

Air Act (“CAA”), National Environmental Policy Act (“NEPA”), Mineral Leasing Act (“MLA”), and Outer Continental Shelf Lands Act (“OCSLA”) by directing agencies to consider the global effects of greenhouse gas emissions.

1. Final Agency Action

“Agency action” is defined as “the whole or part of an agency rule, order, license, sanction, relief, or the equivalent or denial thereof, or failure to act.” 5 U.S.C. § 551(13). The Supreme Court has articulated two conditions for an agency’s action to qualify as “final.” First, the action may not be “merely tentative or interlocutory” in nature; rather, it “must mark the consummation of the agency’s decisionmaking process.” *Bennett v. Spear*, 520 U.S. 154, 178, 117 S. Ct. 1154 (1997) (internal citations omitted). Second, the action “must be one by which rights or obligations have been determined, or from which legal consequences flow.” *Id.*

Defendants contend that all the Plaintiff States’ claims fail for the lack of any “final agency action.” As to the first *Bennett* condition, Defendants maintain that the SC-GHG Estimates do not “mark the consummation of the agency’s decisionmaking process” because “they have no significance unless and until they are actually used in some future rulemaking.”⁵² Referring to the Estimates as “interim,” Defendants further explain that the SC-GHG Estimates “mark only the (potential) *beginning* of dozens of separate regulatory processes, which may eventually culminate in the issuance of regulations that *are* final agency action.” *Id.* (emphasis in original/emphasis added)

⁵² Doc. 31-1, at 38.

The Plaintiff States argue that the Interim Estimates are legislative rules, and thus, automatically constitute final agency action.⁵³ Even still, the Plaintiff States contend the SC-GHG Estimates also meet the two-part test for “final agency action.” The Court agrees.

The first prong is analyzed by determining “whether an action is properly attributable to the agency itself and represents the culmination of that agency’s consideration of an issue,” or is “only the ruling of a subordinate official, or tentative.” Here, the SC-GHG Estimates were issued by the IWG under the authority of EO 13990 and were the culmination of the IWG’s consideration of the issue of how to account for the social costs of greenhouse gas emissions in regulatory cost-benefit analyses. The label “interim” does not alter the inherent finality of the rule for purposes of APA review. “As long as an agency has completed its decisionmaking on the challenged rule—even one interim in nature—the rule satisfies the first prong of the finality test.” *Louisiana v. Biden*, 2021 WL 2446010 at *1, *13 (W.D. La. June 15, 2021).

The “interim” SC-GHG Estimates are the final directive from the IWG on how agencies are to conduct their cost-benefit analyses until a different, “permanent” rule is issued. Significantly, during the pendency of this suit, the Office of Information and Regulatory Affairs announced that the target date for publishing the next set of SC-GHG Estimates is January 2022. Indeed, the “interim” Estimates have already been utilized by executive agencies, indicating that the agencies interpret the SC-GHG Estimates as final and binding. As noted above, Plaintiff States have provided numerous instances where

⁵³ Doc. 48, at 39.

agencies are using the SC-GHG Estimates that this Court finds are causing a direct harm to the Plaintiff States in increased costs, delayed projects and the loss of Plaintiff States' revenues. As a result, the "Interim" SC-GHG Estimates are indeed final; the next set of SC-GHG Estimates was due to be finalized in January 2022. As of this date, they have yet to be finalized and the Defendants inform the Court that they will probably not be finalized until the summer of 2022.⁵⁴ Accordingly, the IWG's SC-GHG Estimates constitute a final agency action under the APA.

2. Zone of Interests

Next, the Plaintiff States must satisfy the zone-of-interests test to pursue claims under the APA. *See Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians v. Patchak*, ___ U.S. ___, 132 S. Ct. 2199, 2210 (2021). Specifically, the Plaintiff States must show that the interest asserted is "arguably within the zone of interests to be protected or regulated by the statute" claimed to be violated. *Ass'n of Data Processing Serv. Orgs., Inc. v. Camp*, 397 U.S. 150, 153, 90 S. Ct. 827 (1970). The Supreme Court has emphasized that this standard "is not meant to be especially demanding" and is evaluated in keeping with the underlying presumption of reviewability. *Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians*, 132 S. Ct. at 2210 (quoting *Clarke v. Sec. Indus. Ass'n*, 479 U.S. 388, 399, 107 S. Ct. 750 (1987)). Furthermore, "the benefit of any doubt goes to the plaintiff," and suit should be foreclosed "only when 'a plaintiff's interests are so marginally related to or inconsistent with the purposes implicit in the statute that it cannot reasonably

⁵⁴ Defendant Supplemental Memorandum, p. 23, Doc. 90.

be assumed that Congress intended to permit the suit.” *Id.* (quoting *Sec. Indus. Ass’n*, 479 U.S. at 399–400, 107 S. Ct. 827).

Here, the interests the Plaintiff States seek to protect undoubtedly fall within the zone of interests embodied in the statutes they claim to be violated by Defendants—the APA, EPCA, CAA, NEPA, MLA, and OCSLA.

3. Statutory Preclusion of Judicial Review

The APA exempts agency action from judicial review if the organic statute “precludes judicial review.” 5 U.S.C. § 701(a)(1). Considering the “well-settled presumption favoring interpretations of statutes that allow judicial review of administrative action,” an intent to preclude such review will be found “only if presented with ‘clear and convincing evidence.’” *Reno v. Catholic Soc. Servs., Inc.*, 509 U.S. 43, 63–64, 113 S. Ct. 2485 (1993) (quoting *McNary v. Haitian Refugee Ctr., Inc.*, 498 U.S. 479, 496, 111 S. Ct. 888 (1991); *Abbott Labs. v. Gardner*, 387 U.S. 136, 141, 87 S. Ct. 1507 (1967)). Establishing unreviewability is an onerous burden, and “where substantial doubt about the congressional intent exists, the general presumption favoring judicial review of administrative action is controlling.” *Block v. Cmty. Nutrition Inst.*, 467 U.S. 340, 351, 104 S. Ct. 2450 (1984).

This Court has not found, nor have Defendants cited any statute(s) indicating an intent to preclude judicial review of the Plaintiff States’ claims. Accordingly, the claims are not excluded from judicial review under Section 701(a)(1).

(IV) LAW AND ANALYSIS

To obtain a preliminary injunction, Plaintiff States must show: “(1) a substantial likelihood of success on the merits; (2) a substantial threat of irreparable injury if the injunction is not issued; (3) that the threatened injury if the injunction is denied outweighs any harm that will result if the injunction is granted; and (4) that the grant of an injunction will not disserve the public interest.” *Sepulvado v. Jindal*, 729 F.3d 413, 417 (5th Cir. 2013).

1. Plaintiff States Likelihood of Success on the Merits

The Plaintiff States argue that they are likely to succeed on the merits because (1) the President and the IWG lack authority to promulgate and enforce the SC-GHG Estimates, or consider the global effects in domestic regulatory policymaking, (2) the SC-GHG Estimates were promulgated without complying with the APA’s notice and comment requirements, (3) the SC-GHG Estimates are arbitrary and capricious under the APA, and (4) the SC-GHG Estimates are contrary to law.

The Plaintiff States suggest that in effect, the President and the IWG’s decision to drop the 7 percent discount rate and increase the time frame of relevant effects to three centuries, will fundamentally transform regulatory analysis and the national economy. The Plaintiff States argue that the Executive Branch does not have the authority to issue Executive Order 13990 because it causes “an enormous and transformative expansion in [its] regulatory authority without clear congressional authorization.” *Util. Air Regulatory Grp.*, 573 U.S. at 324.

(i) The President and the IWG lack authority

“In order for an executive or independent agency to exercise regulatory authority over a major policy question of great economic and political importance, Congress must either: (i) expressly and specifically decide the major policy question itself and delegate to the agency the authority to regulate and enforce; or (ii) expressly and specifically delegate to the agency the authority both to decide the major policy question and to regulate and enforce.” *Paul v. United States*, 140 S.Ct. 342 (2019) (citing *Util. Air Regulatory Grp. v. E.P.A.*, 573 U.S. 302 (2014); *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120 (2000); *MCI Telecomms. Corp. v. Am. Telephone & Telegraph Co.*, 512 U.S. 218 (1994); Stephen A. Breyer, *Judicial Review of Questions of Law and Policy*, 38 Admin. L. Rev. 363, 370 (1986)).

The Executive cannot “bring about an enormous and transformative expansion in [its] regulatory authority without clear congressional authorization.” *Util. Air Regulatory Grp.*, 573 U.S. at 324; *see also Brown & Williamson Tobacco Corp.*, 529 U.S. at 159. (Rejecting executive claim to “jurisdiction to regulate an industry constituting a significant portion of the American economy” absent clear congressional authorization.) The Supreme Court “expect[s] Congress to speak clearly if it wishes to assign to an agency, decisions of vast ‘economic and political significance.’” *Util. Air Regulatory Grp. v. E.P.A.*, 573 U.S. at 324.

Defendants argue that Article II of the United States Constitution supplied President Biden the authority to issue EO 13990. Defendants contend that EO 13990 is a routine exercise of traditional presidential control over subordinates as part of supervising

subordinates’ actions. In other words, the issuance of EO 13990 falls within the President’s authority—and duty—to “supervise and guide” agencies “in order to secure that unitary and uniform execution of the law which Article II of the Constitution evidently contemplated in vesting general executive power in the President alone.” *Bldg. & Const. Trades Dep’t v. Allbaugh*, 295 F.3d 28, 32 (D.C. Cir. 2002) (quoting *Sierra Club v. Costle*, 657 F.2d 298, 406 n. 524 (D.C. Cir. 1981)).

Defendants also rely on the text from EO 13990, that “[n]othing in this order shall be construed to impair or otherwise affect . . . the authority granted by law to an executive department or agency.” *Id.* § 8(a)(i); see also *Id.* § § 5(b)(ii), 8(b) (“This order shall be implemented in a manner consistent with applicable law.”)

Defendants suggest that the “major questions doctrine” has no bearing on the President’s authority to issue EO 13990 because the President is not a creature of statute. Plaintiff States argue that the SC-GHG Estimates implicate a matter of major importance and there is no statutory authority for the Executive branch to issue the SC-GHG Estimates.

The major questions doctrine ensures that agencies do not impose new obligations of “vast ‘economic and political significance’” upon private parties and States unless Congress “speaks clearly.” *Util. Air Reg. Grp.*, 573 U.S. at 324 (2014). The major questions doctrine consists of two steps for the Court to determine: (1) if the assertion of Executive authority implicates matters of “vast ‘economic and political significance,’” and (2) if Congress has “expressly and specifically” delegated authority over the issue to the Executive. *Paul v. United States*, 140 S.Ct. 342 (2019) (statement of Kavanaugh, J.,

respecting denial of certiorari) (collecting cases); *NFIB v. OSHA*, 2022 WL 120952, at *3 (U.S. Jan. 13, 2022).

The major questions doctrine enforces the Nondelegation Doctrine by “protect[ing] the separation of powers and ensur[ing] that any new laws governing the lives of Americans are subject to the robust democratic processes the Constitution demands.” *NFIB*, 2022 WL 120952, at *6 (Gorsuch, J., concurring).

Plaintiff States assert that the SC-GHG Estimates will impose significant costs on the economy.⁵⁵ “The total cost of these 83 regulatory actions [using social costs] is estimated to be between \$447 billion and \$561 billion (in 2020 dollars).”⁵⁶ Courts have found that less costly and far-reaching regulations have triggered the major questions doctrine. For example, the Fifth Circuit recently held that the OSHA Vaccine Mandate, which imposed almost \$3 billion in compliance costs, triggered the major questions doctrine. *BST Holdings, L.L.C. v. OSHA*, 17 F.4th 604, 617 (5th Cir. 2021); *see also Id.* at 617–18 (citing *MCI Telecomms. Corp. v. AT&T*, 512 U.S. 218, 2131 (1994) (declining to hold that the FCC could eliminate telecommunications rate-filing requirements); *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 159–160 (2000) (declining to hold that the FDA could regulate cigarettes); *Gonzales v. Oregon*, 546 U.S. 243, 262 (2006) (declining to allow DOJ to ban physician-assisted suicide).

Additionally, Plaintiff States contend that Defendants have failed to identify clear statutory authorization for issuing EO 13990. “[W]hen Congress wishes to ‘alter the

⁵⁵ Plaintiffs’ exhibit 26, p.2.

⁵⁶ Doc. 57 ¶¶ 14-26.

fundamental details of a regulatory scheme,’ . . . we would expect it to speak with the requisite clarity to place that intent beyond dispute.” *U.S. Forest Serv. v. Cowpasture River Pres. Ass’n* 140 S.Ct. 1837, 1848–49 (2020). “When the President takes measures incompatible with the expressed or implied will of Congress, his power is at its lowest ebb, for then he can rely only upon his own constitutional powers minus any constitutional powers of Congress over the matter.” *Youngstown Sheet & Tube Co. v. Sawyer*, 343 U.S. 579, 637 (1952).

Specifically, Plaintiff States challenge the SC-GHG Estimates’ consideration of global effects as opposed to national or domestic effects. Plaintiff States assert that Congress has addressed the issue of whether agencies can consider global or domestic effects and informs the Court that Congress has emphatically articulated that agencies may only consider effects to our Nation. To support their position, Plaintiff States note that (1) EPCA directs the Executive “to consider the need for *national* energy and water conservation,” 42 U.S.C. § 6295(o)(2)(B)(i) (emphasis added), (2) “the need of the *United States* to conserve energy,” 49 U.S.C. § 32902(f) (emphasis added), (3) the Clean Air Act directs the Executive “to protect and enhance the quality of *the Nation’s* air resources so as to promote the public health and welfare and the productive capacity of its population,” 42 U.S.C. 7401(b)(1) (emphasis added), (4) NEPA directs agencies to “assure for *all Americans* safe, healthful, productive, and esthetically and culturally pleasing surroundings,” U.S.C. § 4331(b)(2) (emphasis added), (5) the MLA directs the Executive to consider the “public welfare” of the *United States* in conducting oil and gas lease sales, 30 U.S.C. § 187 (emphasis added), and (6) the OCSLA directs the Executive to make the

Outer Continental Shelf “available for expeditious and orderly development, subject to environmental safeguards, in a manner which is consistent with the maintenance of competition and other *national* needs.” 43 U.S.C. § 1332(3) (emphasis added).

Plaintiff States argue that EO 13990 and the SC-GHG Estimates mandate outcomes with massive numbers for the cost side of the scale, unlike EO12866 and Circular A-4, which provided a framework for agencies to calculate the costs and benefits of regulation and determine how to weigh them under their statutory authority. Thus, EO 13990 and the SC-GHG Estimates are a legislative rule that dictates specific numerical values for use across all decisionmaking affecting private parties. *See e.g., Catholic Health Initiatives v. Sebelius*, 617 F.3d 490, 495 (D.C. Cir. 2010) (“Judge Friendly wrote that when an agency wants to state a principle ‘in numerical terms,’ terms that cannot be derived from a particular record, the agency is legislating and should act through rulemaking.”)

Plaintiff States also maintain that the SC-GHG Estimates alter rights and obligations and remove agency discretion. *See Texas v. EEOC*, 933 F.3d 433, 442 (5th Cir. 2019) (“[I]f a statement denies the [agency] discretion in the area of its coverage[,] then the statement is binding, and creates rights or obligations.”) Plaintiff States note that the SC-GHG Estimates direct agencies to use specific social cost numbers, not only in rulemaking, but in “other relevant agency actions,” such as project-level NEPA reviews. Doc. 55-27, pp. 5-6, 24-25; Doc. 55-26, p. 5.

The Court finds that EO 13990 contradicts Congress’ intent regarding legislative rulemaking by mandating consideration of the global effects. The Court further finds that the President lacks power to promulgate fundamentally transformative legislative rules in

areas of vast political, social, and economic importance, thus, the issuance of EO 13990 violates the major questions doctrine.

(ii) The SC-GHG Estimates were promulgated without complying with the APA’s notice and comment requirements

Next, the Plaintiff States maintain that the SC-GHG were promulgated without complying with the APA’s notice and comment requirements. The Plaintiff States remark that the SC-GHG Estimates are a legislative rule because they prescribe valuations, costs or accounting, or practices bearing on any of the foregoing. 5 U.S.C. § 551(4).

Agency legislative rules must go through the APA’s notice-and-comments procedures. 5 U.S.C. § 553; *see also Texas v. United States*, 2021 WL 723856, at *43 (S.D. Tex. Feb. 23, 2021). Consequently, the SC-GHG Estimates were required to go through the APA’s notice and comment procedures. *See Catholic Health Initiatives v. Sebelius*, 617 F.3d 490, 495 (D.C. Cir. 2010) (“When an agency wants to state a principle ‘in numerical terms,’ terms that cannot be derived from a particular record, the agency is legislating and should act through rulemaking.”); *see also Hoctor v. U.S. Dep’t of Agric.*, 82 F.3d 165, 170 (7th Cir. 1996) (“When agencies base rules on arbitrary choices they are legislating, and so these rules are legislative or substantive and require notice and comment rulemaking, a procedure that is analogous to the procedure employed by legislatures in making statutes.”)

In addition, Plaintiff States maintain that the SC-GHG Estimates effectively repeal key provisions of two regulatory actions that went through the notice and comment procedure—the 7 percent discount rate and focus on domestic effects. *Clean Water Action v. United States Env’tl. Prot. Agency*, 936 F.3d 308, 312 (5th Cir. 2019) (an agency must

“follow the same process to revise a rule as it used to promulgate it”) (citing *Perez v. Mortg. Bankers Ass’n*, 575 U.S. 92, 100 (2015)).

Next, the SC-GHG Estimates revise CEQ’s recent NEPA final rule’s causation standard. Specifically, the CEQ’s rule requires agencies to exclude effects that “are remote in time, geographically remote, or the product of a lengthy causal chain,” 85 Fed. Reg. 43304, 43375 (July 16, 2020); the SC-GHG Estimates require agencies to consider remote effects which contradicts the CEQ’s rule.⁵⁷

The Plaintiff States note that the Administration was entitled to amend the rules but was required to “use the same procedures” in amending as it “used to issue the rule in the first instance.” *Clean Water Action*, 936 F.3d at 313–14 (quoting *Perez*, 575 U.S. at 101). However, the SC-GHG Estimates were promulgated “without observance of procedure required by law.” 5 U.S.C. § 706(2)(D). The Court finds that EO 13990 was promulgated without complying with the APA’s notice and comment requirements.

(iii). The SC-GHG Estimates are arbitrary and capricious under the APA

The Plaintiff States further maintain that the SC-GHG Estimates are arbitrary and capricious under the APA. Under the APA, courts are to “hold unlawful and set aside agency action, findings, and conclusions found to be arbitrary, capricious, an abuse of discretion.” 5 U.S.C. § 706(2)(A). “Federal administrative agencies are required to engage in ‘reasoned decisionmaking,’” *Texas v. United States*, 2021 WL 723856, at *39, meaning

⁵⁷ The CEQ’s rule was published only after complying with the APA’s notice and comment procedure.

that “[n]ot only must an agency’s decreed result be within the scope of its lawful authority, but the process by which it reaches that result must be logical and rational.” *Id.*

The Plaintiff States argue that the Biden SC-GHG Estimates are based on a fundamentally flawed methodology that does not take into account statutory considerations, ignores decades of best regulatory practices, and *sub silentio* depart from regulatory documents that remain in force. *Cf. California v. Bernhardt*, 472 F.Supp.3d 573, 600–01 (N.D. Cal. 2020) (“While the Executive branch holds the power to issue executive orders, an agency cannot flip-flop regulations on the whims of each new administration. The APA requires reasoning, deliberation, and process. These requirements exist in part, because markets and industries rely on stable regulations.”) In other words, the SC-GHG Estimates are neither “reasonable” nor “reasonably explained.” *Fed. Commc’ns Comm’n v. Prometheus Radio Project*, 141 S.Ct. 1150, 1158 (2021). The Plaintiff States present numerous arguments as to why the SC-GHG Estimates are arbitrary and capricious.

- The SC-GHG Estimates fail to consider the positive externalities of energy production.
- The IWG failed to consider whether “there was ‘legitimate reliance’ on the” prior administration’s method of focusing on domestic effects and using higher discount rates. *Dep’t of Homeland Security v. Regents of the Univ. of Cal.*, 140 S.Ct. 1891, 1913 (2020) (quoting *Smiley v. Citibank (South Dakota), N.A.*, 517 U.S. 735, 742 (1996)).
- The SC-GHG Estimates ignore specific factual findings made by the previous Administration justifying its reliance on Circular A-4 in regulatory proceedings.
- There is a “significant mismatch” between the SC-GHG Estimates’ conclusions and the administrative record.⁵⁸

⁵⁸ The Plaintiff States remark that the IWG acknowledged that its SC-GHG Estimate was based on antiquated models, needed updating and was based largely on guesswork, but instead of allowing for the comment period for

- The IWG fails to justify the SC-GHG’s use of a global rather than domestic scope in calculating costs.
- The SC-GHG arbitrarily departs from decades of prior Executive Branch cost/benefit practice regarding discount rates.⁵⁹
- The SC-GHG Estimates are based on the same three inherently flawed models that produced the Obama SCC, SCM, and SCN.
- The SC-GHG Estimates reject recent standards set by the Council on Environmental Quality (“CEQ”) concerning the National Environmental Policy Act (“NEPA”) regulations.⁶⁰
- The IWG relied upon statutorily impermissible factors by considering global rather than domestic effects.
- The IWG ignores significant federalism costs caused by the SC-GHG Estimates, an important aspect of regulatory analysis.⁶¹ Specifically, the IWG neglected to consider the effect the SC-GHG Estimates will have upon State revenues; the Biden SC-GHG Estimates will result in significantly fewer tracts of land being made available for lease sales.⁶²

(iv). The SC-GHG Estimates are contrary to law

The Plaintiff States maintain that the SC-GHG Estimates are contrary to law because they direct agencies to consider factors Congress did not authorize. Specifically, the Plaintiff States assert that the SC-GHG contravenes (1) the Energy Policy and Conservation Act (“EPCA”) because the EPCA unambiguously precludes the consideration of global effects, (2) the Clean Air Act (“CAA”), which does not authorize the Administrator of the EPA to consider global effects in setting air pollution standards

outside input, the IWG issued the SC-GHG in a month in order to comply with Biden’s EO 13990’s demand to impose more stringent regulation.

⁵⁹ Prior Executive Branch agencies utilized standard discount rates of 3 and 7 percent as embodied in Circular A-4.

⁶⁰ 85 Fed. Reg. 43304, 43375 (July 16, 2020).

⁶¹ EO 13132, 64 Fed. Reg. 43255, 43256 (August 4, 1999).

⁶² See, *e.g.*, Dep’t of Interior, Secretarial Order No. 3399 (Apr. 16, 2021) (noting intent to employ SC-GHG).

for new motor vehicles and stationary sources, (3) the NEPA, wherein the CEQ's regulation implementing NEPA precludes both the SC-GHG Estimates' consideration of global effects and approach to causation, (4) the Mineral Leasing Act ("MLA") because it prevents the Secretary of the Interior's duty to ensure the expeditious development of public land, and (5) the OCSLA by disrupting its statutory leasing program which promotes the development of resources on the Outer Continental Shelf⁶³ and by compelling a global effects analysis.

(v). The SC-GHG Estimates are subject to APA review

The Plaintiff States maintain that the SC-GHG Estimates are final agency action and thus subject to APA review. The APA allows judicial review only of a "final agency action," "that (1) mark[s] the consummation of the agency's decisionmaking process" and (2) "by which rights or obligations have been determined, or from which legal consequences will flow." *Bennett v. Spear*, 520 U.S. 154, 177–78, 117 S.Ct. 1154 (1997).

The Plaintiff States argue that the SC-GHG Estimates mark the consummation of the IWG's decisionmaking process because they are the IWG's last word until at least 2022 and because there are no further steps in the process; thus, the SC-GHG Estimates for 2021 meet the finality test. See *Louisiana*, 2021 WL 2446010, at *12 ("As long as an agency has completed its decisionmaking on a challenged rule—even one interim in nature—the rule satisfies the first prong of the finality test.") (citing *NRDC v. Wheeler*, 955 F.3d 68, 80 (D.C. Cir. 2020)).

⁶³ 43 U.S.C. §§ 1332, 1337, 1340, 1344, 1345, and 1351.

As to the second prong, the Plaintiff States argue that the SC-GHG Estimates bind the entire Executive Branch to a particular numerical measure of the social cost of greenhouse gases. Furthermore, the SC-GHG Estimates “denies the decisionmaker discretion in the area of its coverage[,] then the statement is binding, and creates rights or obligations.” *Texas*, 809 F.3d at 171.

The Plaintiff States maintain that the IWG is an “agency” for purposes of the APA because it has been granted authority by EO 13990 to act “with substantial independent authority in the exercise of specific functions.” *Soucie v. David*, 48 F.2d 1067, 1073 (D.C. Cir. 1971). Specifically, the IWG has been granted authority to create SC-GHG Estimates that will be binding on executive agencies. *See Pac Legal Found. v. Council on Env'tl. Quality*, 636 F.2d 1259, 1262 (D.C. Cir. 1980) (The power to “issue guidelines to federal agencies for the preparation of” regulatory review is a hallmark of an APA agency.)

Lastly, the Plaintiff States maintain that they have an *ultra vires* cause of action to challenge Section 5 of EO 13990 because it is not authorized by any statute and is in direct conflict with several statutes. *Ultra vires* review is available to review “whether the President has violated the Constitution, the statute under which the challenged action was taken, or other statutes, or did not have statutory authority to take a particular action.” *Ancient Coin Collectors Guild v. U.S. Customs & Border Protection*, 801 F.Supp.2d 383, 406 (D.Ma. 2011) (citing *Mountain States Legal Found. v. Bush*, 306 F.3d 1132, 1136 (D.C. Cir. 2002)); *see also Associated Builders & Contractors of SE Texas v. Rung*, 2016 WL 8188655, at *5 (E.D. Tex. Oct. 24, 2016) (“The DOL, a federal agency also operating within the Executive Branch, has implemented the President’s Executive Order by issuing

the Guidance incorporated by reference in the new Rule. Therefore, the Executive Order may be challenged by Plaintiffs on both statutory and non-statutory grounds.”) (citing *Chamber of Commerce of the U.S. v. Reich*, 74 F.3d 1322, 1332 (D.C. Cir. 1996)).

The Plaintiff States thus argue that they have demonstrated multiple independently sufficient grounds to vacate the SC-GHG Estimate and therefore have shown a strong likelihood of success on the merits. The Court agrees and finds that the Plaintiff States have shown a strong likelihood of success on the merits.

2. Irreparable Harm

The Plaintiff States maintain that they easily meet the threshold requirement that if an injunction is not issued, they will suffer inevitable and irreparable harm. Plaintiff states must show that they are “likely to suffer irreparable harm in the absence of preliminary relief.” *Winter v. Natural Resources Defense Council, Inc.*, 555 U.S. 7, 129 S.Ct. 365 (2008). For their injury to be sufficiently “irreparable,” the Plaintiff States need only show it “cannot be undone through monetary remedies.” *Burgess v. FDIC*, 871 F.3d 297, 304 (5th Cir. 2017) (quoting *Deerfield Med. Ctr. v. City of Deerfield Beach*, 661 F.2d 328, 338 (5th Cir. 1981)).

Defendants contend that Plaintiff States’ alleged harm is speculative at best because no specific agency action has caused them injury. Or, better yet, it is speculative to assume that EO 13990 will dictate policy outcomes that concretely harm Plaintiff States. In other words, Plaintiff States’ injury-in-fact assumes that they will be harmed by future hypothetical agency actions. Additionally, Defendants contend that it is unknowable in

advance if any harm caused by future regulations is causally connected to EO 13990 and the SC-GHG Estimates.

The Plaintiff States submit that they are substantial producers of energy and rely upon tax revenues from energy production to perform their sovereign duties. As such, the increased SC-GHG Estimates will cause regulatory standards affecting air quality, energy efficiency, power plant regulation to increase in stringency, which will directly harm the economies and revenues of Plaintiff States. As noted above, the Plaintiff States maintain that Texas, Louisiana, Kentucky, Florida, Georgia, South Dakota, Mississippi, Alabama, West Virginia, and Wyoming and their citizens will all be imminently harmed by EO 13990 and the SC-GHG Estimates by causing increased energy costs. The Plaintiff States argue that the chain of causation is clear and confirmed by history.

Plaintiff States also contend that the SC-GHG Estimates will impose additional duties upon Plaintiff States when they implement cooperative federalism programs, as well as the harm to the Plaintiff States' ability to purchase affordable energy to carry out their sovereign functions. Furthermore, the SC-GHG Estimates will adversely impact Plaintiff States' revenues and Louisiana's coastline will be threatened by directly reducing the funds necessary to maintain the state's coastal lands.

The Plaintiff States remark that the IWG's failure to employ notice and comment divested them of their procedural rights under the APA and various other federal statutes to be consulted and offer views regarding administrative actions impacting concrete State interests. *See Summers v. Earth Island Inst.*, 555 U.S. 488, 496 (2009) (“[A] ‘persons who

has been accorded a procedural right to protect his concrete interests can assert that right without meeting all the normal standards for redressability and immediacy.”)

Finally, the Plaintiff States argue that they have *parens patriae* standing to vindicate the economic injuries the SC-GHG Estimates will impose on their citizens. *See Alfred L. Snapp & Son, Inc., v. Puerto Rico ex rel. Barez*, 458 U.S. 592, 607 (1982) (*parens patriae* standing appropriate when based on State’s “interest in the health and well-being—both physical and economic—of its residents in general”).

As noted by Defendants, EO 13990 instructs agencies that “[i]t is essential that agencies capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account,” and that “[a]n accurate social cost is essential for agencies to accurately determine the social benefits of reducing greenhouse gas emissions when conducting cost-benefit analyses of regulatory and other actions.” EO 13990 § 5. The EO is not a recommendation, nor is it guidance; EO 13990 directs that agencies “shall use” the SC-GHG Estimates “when monetizing the value of changes in greenhouse gas emissions resulting from regulations and other relevant agency actions.” *Id.*

Plaintiff States have sufficiently identified the kinds of harms to support injunctive relief. Moreover, the Court finds that the Plaintiff States have made a clear showing of an injury-in-fact, and that such injury “cannot be undone through monetary remedies,” *Louisiana v. Biden*, 2021 WL 2446010, at *21 (W.D. La. June 15, 2021), such that they need immediate relief now, lest they be unable to ever obtain meaningful judicial relief in the future. *See Texas v. United States*, 809 F.3d 134, 186 (5th Cir. 2015) (financial injury

irreparable); *Louisiana v. Biden*, 2021 WL 2446010, at *21 (financial and *parens patriae* harm irreparable); *State v. Biden*, 2021 WL 3603341, at *26 (N.D. Tex. Aug. 13, 2021) (financial injuries irreparable); *Texas v. United States*, 2021 WL 2096669, at *47 (S.D. Tex. Feb. 23, 2021) (same); *see also e.g., Texas*, 2021 WL 3683913, at *59 (injuries to Plaintiff States’ sovereign powers are irreparable); *Nevada v. U. S. Dep’t of Lab.*, 218 F.Supp.3d 520, 532 (E.D. Tex. 2016).

2. Will the threatened injury if the injunction is denied outweigh any harm that will result if the injunction is not issued?

Plaintiff States maintain that the harms to their States and their citizens’ economic well-being more than suffice to establish standing and the possibility of irreparable harm. As previously noted, the SC-GHG Estimates will harm Plaintiff States’ ability to purchase affordable energy to carry out their sovereign functions as the directive to use the SC-GHG Estimates will significantly drive up costs while simultaneously significantly decrease States revenues resulting in the inability of the Plaintiff States to carry out their sovereign duties to their citizens.⁶⁴ Specifically, Louisiana will be directly harmed by the reduction of funds necessary to maintain the state’s coastal lands. *See Massachusetts*, 549 U.S. at 519 & n. 17. (State’s “independent interest ‘in all the earth and air within its domain’” and “well-founded desire to preserve its sovereign territory” supports standing).⁶⁵ In addition,

⁶⁴ See Dismukes Decl. ¶¶ 17-26.

⁶⁵ Plaintiff States note that the deprivation of those funds directly harms Louisiana’s territory. Louisiana is losing swaths of coastal land—nearly two thousand square miles and counting—due to follow-on effects from environmental catastrophes. *See Louisiana*, 2021 WL 2446010, at *21 (noting irreparable harm from “damages for reduced funding to the Coastal Master Plan, which would reduce proceeds that are used in Louisiana’s coastal recovery and restoration program”)

the implementation of SC-GHG Estimates without complying with the APA and the notice and comment period have divested Plaintiff States of their procedural rights.

The Court finds that the balance of the injuries weighs substantially in favor of the Plaintiff States.

3. Will the Injunction Harm Defendant or Disserve the Public Interest?

The Plaintiff States maintain that the public interest and balance of equities weigh in favor of granting a preliminary injunction because Defendants “have no legitimate interest in the implementation of [the] unlawful” SC-GHG Estimates. *See Texas*, 2021 WL 7236, at *49. The Plaintiff States argue that the public has an overriding interest in ensuring that vast regulatory programs are implemented lawfully, in compliance with the constitutional separation of powers and the APA, whereas the Defendants would suffer no harm from an injunction. Thus, the Plaintiff States maintain that the public interest and balance of harms weigh heavily in Plaintiff States’ favor. The Court agrees that the public interest and balance of equities weigh heavily in favor of granting a preliminary injunction.

V. CONCLUSION

For the reasons set forth hereinabove, the Motion for Preliminary Injunction will be granted in its entirety.

THUS DONE AND SIGNED in Chambers on this 11th day of February, 2022.



JAMES D. CAIN, JR.
UNITED STATES DISTRICT JUDGE

Exhibit B

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF LOUISIANA
LAKE CHARLES DIVISION

STATE OF LOUISIANA ET AL

CASE NO. 2:21-CV-01074

VERSUS

JUDGE JAMES D. CAIN, JR.

JOSEPH R BIDEN JR ET AL

MAGISTRATE JUDGE KAY

ORDER

For the reasons set forth in the Memorandum Ruling,

IT IS ORDERED that the Motion for Preliminary Injunction (Doc. 53) is hereby
GRANTED.

IT IS THEREFORE ORDERED that the Defendants,¹ Cecilia Rouse, Shalanda Young, Kei Koizumi, Janet Yellen, Deb Haaland, Tom Vilsack, Gina Raimondo, Xavier Becerra, Pete Buttigieg, Jennifer Granholm, Brenda Mallory, Michael S. Regan, Gina McCarthy, Brian Deese, Jack Danielson, U.S. Environmental Protection Agency, U.S. Department of Energy, U.S. Department of Transportation, U.S. Department of Agriculture, U.S. Department of Interior, National Highway Traffic Safety Administration, and the Interagency Working Group on Social Cost of Greenhouse Gases are ENJOINED and RESTRAINED from:

- (1) adopting, employing, treating as binding, or relying upon the work product of the Interagency Working Group (“IWG”); (2) enjoining Defendants from independently relying upon the IWG’s methodology considering global effects,

¹ With the exception of President Biden as he is not an agency under the Administrative Procedures Act.

- discount rates, and time horizons; and (3) ordering Defendants to return to the guidance of Circular A-4 in conducting regulatory analysis;
- (2) Adopting, employing, treating as binding, or relying upon any Social Cost of Greenhouse Gas estimates based on global effects or that otherwise fails to comply with applicable law;
- (3) Adopting, employing, treating as binding, or relying upon any estimate of Social Cost of Greenhouse Gases that does not utilize discount rates of 3 and 7 percent or that otherwise does not comply with Circular A-4; and
- (4) Relying upon or implementing Section 5 of Executive Order 13990 in any manner.

IT IS FURTHER ORDERED that this Order shall become effective immediately and shall remain in effect, pending the final resolution of this case or until further orders of this Court, the United States Court of Appeals for the Fifth Circuit, or the United States Supreme Court.

IT IS FURTHER ORDERED that no security bond shall be required under Federal Rule of Civil Procedure 65.

THUS DONE AND SIGNED in Chambers on this 11th day of February, 2021.



JAMES D. CAIN, JR.
UNITED STATES DISTRICT JUDGE

Exhibit C

Presidential Documents

Executive Order 13990 of January 20, 2021

Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1. Policy. Our Nation has an abiding commitment to empower our workers and communities; promote and protect our public health and the environment; and conserve our national treasures and monuments, places that secure our national memory. Where the Federal Government has failed to meet that commitment in the past, it must advance environmental justice. In carrying out this charge, the Federal Government must be guided by the best science and be protected by processes that ensure the integrity of Federal decision-making. It is, therefore, the policy of my Administration to listen to the science; to improve public health and protect our environment; to ensure access to clean air and water; to limit exposure to dangerous chemicals and pesticides; to hold polluters accountable, including those who disproportionately harm communities of color and low-income communities; to reduce greenhouse gas emissions; to bolster resilience to the impacts of climate change; to restore and expand our national treasures and monuments; and to prioritize both environmental justice and the creation of the well-paying union jobs necessary to deliver on these goals.

To that end, this order directs all executive departments and agencies (agencies) to immediately review and, as appropriate and consistent with applicable law, take action to address the promulgation of Federal regulations and other actions during the last 4 years that conflict with these important national objectives, and to immediately commence work to confront the climate crisis.

Sec. 2. Immediate Review of Agency Actions Taken Between January 20, 2017, and January 20, 2021. (a) The heads of all agencies shall immediately review all existing regulations, orders, guidance documents, policies, and any other similar agency actions (agency actions) promulgated, issued, or adopted between January 20, 2017, and January 20, 2021, that are or may be inconsistent with, or present obstacles to, the policy set forth in section 1 of this order. For any such actions identified by the agencies, the heads of agencies shall, as appropriate and consistent with applicable law, consider suspending, revising, or rescinding the agency actions. In addition, for the agency actions in the 4 categories set forth in subsections (i) through (iv) of this section, the head of the relevant agency, as appropriate and consistent with applicable law, shall consider publishing for notice and comment a proposed rule suspending, revising, or rescinding the agency action within the time frame specified.

(i) Reducing Methane Emissions in the Oil and Gas Sector: “Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Reconsideration,” 85 FR 57398 (September 15, 2020), by September 2021.

(ii) Establishing Ambitious, Job-Creating Fuel Economy Standards: “The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program,” 84 FR 51310 (September 27, 2019), by April 2021; and “The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks,” 85 FR 24174 (April 30,

2020), by July 2021. In considering whether to propose suspending, revising, or rescinding the latter rule, the agency should consider the views of representatives from labor unions, States, and industry.

(iii) Job-Creating Appliance- and Building-Efficiency Standards: “Energy Conservation Program for Appliance Standards: Procedures for Use in New or Revised Energy Conservation Standards and Test Procedures for Consumer Products and Commercial/Industrial Equipment,” 85 FR 8626 (February 14, 2020), with major revisions proposed by March 2021 and any remaining revisions proposed by June 2021; “Energy Conservation Program for Appliance Standards: Procedures for Evaluating Statutory Factors for Use in New or Revised Energy Conservation Standards,” 85 FR 50937 (August 19, 2020), with major revisions proposed by March 2021 and any remaining revisions proposed by June 2021; “Final Determination Regarding Energy Efficiency Improvements in the 2018 International Energy Conservation Code (IECC),” 84 FR 67435 (December 10, 2019), by May 2021; “Final Determination Regarding Energy Efficiency Improvements in ANSI/ASHRAE/IES Standard 90.1–2016: Energy Standard for Buildings, Except Low-Rise Residential Buildings,” 83 FR 8463 (February 27, 2018), by May 2021.

(iv) Protecting Our Air from Harmful Pollution: “National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units—Reconsideration of Supplemental Finding and Residual Risk and Technology Review,” 85 FR 31286 (May 22, 2020), by August 2021; “Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process,” 85 FR 84130 (December 23, 2020), as soon as possible; “Strengthening Transparency in Pivotal Science Underlying Significant Regulatory Actions and Influential Scientific Information,” 86 FR 469 (January 6, 2021), as soon as possible.

(b) Within 30 days of the date of this order, heads of agencies shall submit to the Director of the Office of Management and Budget (OMB) a preliminary list of any actions being considered pursuant to section (2)(a) of this order that would be completed by December 31, 2021, and that would be subject to OMB review. Within 90 days of the date of this order, heads of agencies shall submit to the Director of OMB an updated list of any actions being considered pursuant to section (2)(a) of this order that would be completed by December 31, 2025, and that would be subject to OMB review. At the time of submission to the Director of OMB, heads of agencies shall also send each list to the National Climate Advisor. In addition, and at the same time, heads of agencies shall send to the National Climate Advisor a list of additional actions being considered pursuant to section (2)(a) of this order that would not be subject to OMB review.

(c) Heads of agencies shall, as appropriate and consistent with applicable law, consider whether to take any additional agency actions to fully enforce the policy set forth in section 1 of this order. With respect to the Administrator of the Environmental Protection Agency, the following specific actions should be considered:

(i) proposing new regulations to establish comprehensive standards of performance and emission guidelines for methane and volatile organic compound emissions from existing operations in the oil and gas sector, including the exploration and production, transmission, processing, and storage segments, by September 2021; and

(ii) proposing a Federal Implementation Plan in accordance with the Environmental Protection Agency’s “Findings of Failure To Submit State Implementation Plan Revisions in Response to the 2016 Oil and Natural Gas Industry Control Techniques Guidelines for the 2008 Ozone National Ambient Air Quality Standards (NAAQS) and for States in the Ozone Transport Region,” 85 FR 72963 (November 16, 2020), for California, Connecticut, New York, Pennsylvania, and Texas by January 2022.

(d) The Attorney General may, as appropriate and consistent with applicable law, provide notice of this order and any actions taken pursuant to section 2(a) of this order to any court with jurisdiction over pending litigation related to those agency actions identified pursuant to section (2)(a) of this order, and may, in his discretion, request that the court stay or otherwise dispose of litigation, or seek other appropriate relief consistent with this order, until the completion of the processes described in this order.

(e) In carrying out the actions directed in this section, heads of agencies shall seek input from the public and stakeholders, including State local, Tribal, and territorial officials, scientists, labor unions, environmental advocates, and environmental justice organizations.

Sec. 3. *Restoring National Monuments.* (a) The Secretary of the Interior, as appropriate and consistent with applicable law, including the Antiquities Act, 54 U.S.C. 320301 *et seq.*, shall, in consultation with the Attorney General, the Secretaries of Agriculture and Commerce, the Chair of the Council on Environmental Quality, and Tribal governments, conduct a review of the monument boundaries and conditions that were established by Proclamation 9681 of December 4, 2017 (Modifying the Bears Ears National Monument); Proclamation 9682 of December 4, 2017 (Modifying the Grand Staircase-Escalante National Monument); and Proclamation 10049 of June 5, 2020 (Modifying the Northeast Canyons and Seamounts Marine National Monument), to determine whether restoration of the monument boundaries and conditions that existed as of January 20, 2017, would be appropriate.

(b) Within 60 days of the date of this order, the Secretary of the Interior shall submit a report to the President summarizing the findings of the review conducted pursuant to subsection (a), which shall include recommendations for such Presidential actions or other actions consistent with law as the Secretary may consider appropriate to carry out the policy set forth in section 1 of this order.

(c) The Attorney General may, as appropriate and consistent with applicable law, provide notice of this order to any court with jurisdiction over pending litigation related to the Grand Staircase-Escalante, Bears Ears, and Northeast Canyons and Seamounts Marine National Monuments, and may, in his discretion, request that the court stay the litigation or otherwise delay further litigation, or seek other appropriate relief consistent with this order, pending the completion of the actions described in subsection (a) of this section.

Sec. 4. *Arctic Refuge.* (a) In light of the alleged legal deficiencies underlying the program, including the inadequacy of the environmental review required by the National Environmental Policy Act, the Secretary of the Interior shall, as appropriate and consistent with applicable law, place a temporary moratorium on all activities of the Federal Government relating to the implementation of the Coastal Plain Oil and Gas Leasing Program, as established by the Record of Decision signed August 17, 2020, in the Arctic National Wildlife Refuge. The Secretary shall review the program and, as appropriate and consistent with applicable law, conduct a new, comprehensive analysis of the potential environmental impacts of the oil and gas program.

(b) In Executive Order 13754 of December 9, 2016 (Northern Bering Sea Climate Resilience), and in the Presidential Memorandum of December 20, 2016 (Withdrawal of Certain Portions of the United States Arctic Outer Continental Shelf From Mineral Leasing), President Obama withdrew areas in Arctic waters and the Bering Sea from oil and gas drilling and established the Northern Bering Sea Climate Resilience Area. Subsequently, the order was revoked and the memorandum was amended in Executive Order 13795 of April 28, 2017 (Implementing an America-First Offshore Energy Strategy). Pursuant to section 12(a) of the Outer Continental Shelf Lands Act, 43 U.S.C. 1341(a), Executive Order 13754 and the Presidential Memorandum of December 20, 2016, are hereby reinstated in their original form, thereby restoring the original withdrawal of certain offshore areas in Arctic waters and the Bering Sea from oil and gas drilling.

(c) The Attorney General may, as appropriate and consistent with applicable law, provide notice of this order to any court with jurisdiction over pending litigation related to the Coastal Plain Oil and Gas Leasing Program in the Arctic National Wildlife Refuge and other related programs, and may, in his discretion, request that the court stay the litigation or otherwise delay further litigation, or seek other appropriate relief consistent with this order, pending the completion of the actions described in subsection (a) of this section.

Sec. 5. *Accounting for the Benefits of Reducing Climate Pollution.* (a) It is essential that agencies capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account. Doing so facilitates sound decision-making, recognizes the breadth of climate impacts, and supports the international leadership of the United States on climate issues. The “social cost of carbon” (SCC), “social cost of nitrous oxide” (SCN), and “social cost of methane” (SCM) are estimates of the monetized damages associated with incremental increases in greenhouse gas emissions. They are intended to include changes in net agricultural productivity, human health, property damage from increased flood risk, and the value of ecosystem services. An accurate social cost is essential for agencies to accurately determine the social benefits of reducing greenhouse gas emissions when conducting cost-benefit analyses of regulatory and other actions.

(b) There is hereby established an Interagency Working Group on the Social Cost of Greenhouse Gases (the “Working Group”). The Chair of the Council of Economic Advisers, Director of OMB, and Director of the Office of Science and Technology Policy shall serve as Co-Chairs of the Working Group.

(i) **Membership.** The Working Group shall also include the following other officers, or their designees: the Secretary of the Treasury; the Secretary of the Interior; the Secretary of Agriculture; the Secretary of Commerce; the Secretary of Health and Human Services; the Secretary of Transportation; the Secretary of Energy; the Chair of the Council on Environmental Quality; the Administrator of the Environmental Protection Agency; the Assistant to the President and National Climate Advisor; and the Assistant to the President for Economic Policy and Director of the National Economic Council.

(ii) **Mission and Work.** The Working Group shall, as appropriate and consistent with applicable law:

(A) publish an interim SCC, SCN, and SCM within 30 days of the date of this order, which agencies shall use when monetizing the value of changes in greenhouse gas emissions resulting from regulations and other relevant agency actions until final values are published;

(B) publish a final SCC, SCN, and SCM by no later than January 2022;

(C) provide recommendations to the President, by no later than September 1, 2021, regarding areas of decision-making, budgeting, and procurement by the Federal Government where the SCC, SCN, and SCM should be applied;

(D) provide recommendations, by no later than June 1, 2022, regarding a process for reviewing, and, as appropriate, updating, the SCC, SCN, and SCM to ensure that these costs are based on the best available economics and science; and

(E) provide recommendations, to be published with the final SCC, SCN, and SCM under subparagraph (A) if feasible, and in any event by no later than June 1, 2022, to revise methodologies for calculating the SCC, SCN, and SCM, to the extent that current methodologies do not adequately take account of climate risk, environmental justice, and intergenerational equity.

(iii) Methodology. In carrying out its activities, the Working Group shall consider the recommendations of the National Academies of Science, Engineering, and Medicine as reported in *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide* (2017) and other pertinent scientific literature; solicit public comment; engage with the public and stakeholders; seek the advice of ethics experts; and ensure that the SCC, SCN, and SCM reflect the interests of future generations in avoiding threats posed by climate change.

Sec. 6. *Revoking the March 2019 Permit for the Keystone XL Pipeline.*

(a) On March 29, 2019, the President granted to TransCanada Keystone Pipeline, L.P. a Presidential permit (the “Permit”) to construct, connect, operate, and maintain pipeline facilities at the international border of the United States and Canada (the “Keystone XL pipeline”), subject to express conditions and potential revocation in the President’s sole discretion. The Permit is hereby revoked in accordance with Article 1(1) of the Permit.

(b) In 2015, following an exhaustive review, the Department of State and the President determined that approving the proposed Keystone XL pipeline would not serve the U.S. national interest. That analysis, in addition to concluding that the significance of the proposed pipeline for our energy security and economy is limited, stressed that the United States must prioritize the development of a clean energy economy, which will in turn create good jobs. The analysis further concluded that approval of the proposed pipeline would undermine U.S. climate leadership by undercutting the credibility and influence of the United States in urging other countries to take ambitious climate action.

(c) Climate change has had a growing effect on the U.S. economy, with climate-related costs increasing over the last 4 years. Extreme weather events and other climate-related effects have harmed the health, safety, and security of the American people and have increased the urgency for combatting climate change and accelerating the transition toward a clean energy economy. The world must be put on a sustainable climate pathway to protect Americans and the domestic economy from harmful climate impacts, and to create well-paying union jobs as part of the climate solution.

(d) The Keystone XL pipeline disserves the U.S. national interest. The United States and the world face a climate crisis. That crisis must be met with action on a scale and at a speed commensurate with the need to avoid setting the world on a dangerous, potentially catastrophic, climate trajectory. At home, we will combat the crisis with an ambitious plan to build back better, designed to both reduce harmful emissions and create good clean-energy jobs. Our domestic efforts must go hand in hand with U.S. diplomatic engagement. Because most greenhouse gas emissions originate beyond our borders, such engagement is more necessary and urgent than ever. The United States must be in a position to exercise vigorous climate leadership in order to achieve a significant increase in global climate action and put the world on a sustainable climate pathway. Leaving the Keystone XL pipeline permit in place would not be consistent with my Administration’s economic and climate imperatives.

Sec. 7. *Other Revocations.* (a) Executive Order 13766 of January 24, 2017 (Expediting Environmental Reviews and Approvals For High Priority Infrastructure Projects), Executive Order 13778 of February 28, 2017 (Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the “Waters of the United States” Rule), Executive Order 13783 of March 28, 2017 (Promoting Energy Independence and Economic Growth), Executive Order 13792 of April 26, 2017 (Review of Designations Under the Antiquities Act), Executive Order 13795 of April 28, 2017 (Implementing an America-First Offshore Energy Strategy), Executive Order 13868 of April 10, 2019 (Promoting Energy Infrastructure and Economic Growth), and Executive Order 13927 of June 4, 2020 (Accelerating the Nation’s Economic Recovery from the COVID–19 Emergency by Expediting Infrastructure Investments and Other Activities), are hereby revoked. Executive Order 13834 of May 17, 2018

(Efficient Federal Operations), is hereby revoked except for sections 6, 7, and 11.

(b) Executive Order 13807 of August 15, 2017 (Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects), is hereby revoked. The Director of OMB and the Chair of the Council on Environmental Quality shall jointly consider whether to recommend that a replacement order be issued.

(c) Executive Order 13920 of May 1, 2020 (Securing the United States Bulk-Power System), is hereby suspended for 90 days. The Secretary of Energy and the Director of OMB shall jointly consider whether to recommend that a replacement order be issued.

(d) The Presidential Memorandum of April 12, 2018 (Promoting Domestic Manufacturing and Job Creation Policies and Procedures Relating to Implementation of Air Quality Standards), the Presidential Memorandum of October 19, 2018 (Promoting the Reliable Supply and Delivery of Water in the West), and the Presidential Memorandum of February 19, 2020 (Developing and Delivering More Water Supplies in California), are hereby revoked.

(e) The Council on Environmental Quality shall rescind its draft guidance entitled, "Draft National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions," 84 FR 30097 (June 26, 2019). The Council, as appropriate and consistent with applicable law, shall review, revise, and update its final guidance entitled, "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," 81 FR 51866 (August 5, 2016).

(f) The Director of OMB and the heads of agencies shall promptly take steps to rescind any orders, rules, regulations, guidelines, or policies, or portions thereof, including, if necessary, by proposing such rescissions through notice-and-comment rulemaking, implementing or enforcing the Executive Orders, Presidential Memoranda, and draft guidance identified in this section, as appropriate and consistent with applicable law.

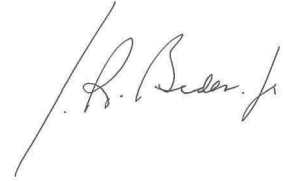
Sec. 8. General Provisions. (a) Nothing in this order shall be construed to impair or otherwise affect:

(i) the authority granted by law to an executive department or agency, or the head thereof; or

(ii) the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.

(b) This order shall be implemented in a manner consistent with applicable law and subject to the availability of appropriations.

(c) This order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.



THE WHITE HOUSE,
January 20, 2021.

Exhibit D

**Technical Support Document: Social Cost of Carbon, Methane,
and Nitrous Oxide
Interim Estimates under Executive Order 13990**

Interagency Working Group on Social Cost of Greenhouse Gases, United States Government

With participation by

Council of Economic Advisers
Council on Environmental Quality
Department of Agriculture
Department of Commerce
Department of Energy
Department of Health and Human Services
Department of the Interior
Department of Transportation
Department of the Treasury
Environmental Protection Agency
National Climate Advisor
National Economic Council
Office of Management and Budget
Office of Science and Technology Policy

February 2021

Preface

*The Interagency Working Group (IWG) on the Social Cost of Greenhouse Gases is committed to ensuring that the estimates agencies use when monetizing the value of changes in greenhouse gas emissions resulting from regulations and other relevant agency actions continue to reflect the best available science and methodologies. This Technical Support Document (TSD) presents interim estimates of the social cost of carbon, methane, and nitrous oxide developed under Executive Order 13990. These interim values are the same as those developed by the IWG in 2013 and 2016. The current IWG will take comment on recent developments in the science and economics for use in a more comprehensive update, to be issued by January 2022, which will more fully address the recommendations of the National Academies of Sciences, Engineering, and Medicine as reported in *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide* (2017) and other pertinent scientific literature. As a part of that request for comment, the IWG will seek comment on the discussion of advances in science and methodology included in this TSD and how those advances can best be incorporated into the revised final estimates.*

Executive Summary

A robust and scientifically founded assessment of the positive and negative impacts that an action can be expected to have on society provides important insights in the policy-making process. The estimates of the social cost of carbon (SC-CO₂), social cost of methane (SC-CH₄), and social cost of nitrous oxide (SC-N₂O) presented here allow agencies to understand the social benefits of reducing emissions of each of these greenhouse gases, or the social costs of increasing such emissions, in the policy making process. Collectively, these values are referenced as the “social cost of greenhouse gases” (SC-GHG) in this document. The SC-GHG is the monetary value of the net harm to society associated with adding a small amount of that GHG to the atmosphere in a given year. In principle, it includes the value of all climate change impacts, including (but not limited to) changes in net agricultural productivity, human health effects, property damage from increased flood risk natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services. The SC-GHG, therefore, should reflect the societal value of reducing emissions of the gas in question by one metric ton. The marginal estimate of social costs will differ by the type of greenhouse gas (such as carbon dioxide, methane, and nitrous oxide) and by the year in which the emissions change occurs. The SC-GHGs are the theoretically appropriate values to use in conducting benefit-cost analyses of policies that affect GHG emissions.

Federal agencies began regularly incorporating social cost of carbon (SC-CO₂) estimates in benefit-cost analyses conducted under Executive Order (E.O.) 12866¹ in 2008, following a court ruling in which an agency was ordered to consider the value of reducing CO₂ emissions in a rulemaking process. The U.S. Ninth Circuit Court of Appeals remanded a fuel economy rule to DOT for failing to monetize CO₂ emission reductions, stating that “while the record shows that there is a range of values, the value of carbon emissions reduction is certainly not zero.”² In 2009, an interagency working group (IWG) was established to ensure that agencies were using the best available science and to promote consistency in the values used across agencies. The IWG published SC-CO₂ estimates in 2010 that were developed from an ensemble of three widely cited integrated assessment models (IAMs) that estimate global climate damages using highly aggregated representations of climate processes and the global economy combined into a single modeling framework. The three IAMs were run using a common set of input assumptions in each model for future population, economic, and GHG emissions growth, as well as equilibrium climate sensitivity (ECS) – a measure of the globally averaged temperature response to increased atmospheric CO₂ concentrations. These estimates were updated in 2013 based on new versions of each IAM. In August 2016 the IWG published estimates of the social cost of methane (SC-CH₄) and nitrous oxide (SC-N₂O) using methodologies that are consistent with the methodology underlying the SC-CO₂ estimates. In January 2017, the National Academies of Sciences, Engineering, and Medicine issued recommendations for an updating process to ensure the estimates continue to reflect the best available science. In March 2017, Executive Order 13783 disbanded the IWG and instructed agencies when monetizing the value of changes

¹ Under E.O. 12866, agencies are required, to the extent permitted by law and where applicable, “to assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.” As indicated in the discussion above, many statutes also require agencies to conduct at least some of the same analyses required under E.O. 12866, such as the Energy Policy and Conservation Act which mandates the setting of fuel economy regulations.

² *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1200 (9th Cir. 2008).

in greenhouse gas emissions resulting from regulations to follow the Office of Management and Budget's (OMB) Circular A-4.

On January 20, 2021, President Biden issued E.O. 13990 which re-established the IWG and directed it to ensure that SC-GHG estimates used by the U.S. Government (USG) reflect the best available science and the recommendations of the National Academies (2017) and work towards approaches that take account of climate risk, environmental justice, and intergenerational equity. The IWG was tasked with first reviewing the SC-GHG estimates currently used by the USG and publishing interim estimates within 30 days of the E.O. that reflect the full impact of GHG emissions, including taking global damages into account. In this initial review, the IWG finds that the SC-GHG estimates used since E.O. 13783 fail to reflect the full impact of GHG emissions in multiple ways. First, the IWG found previously and is restating here that a global perspective is essential for SC-GHG estimates because climate impacts occurring outside U.S. borders can directly and indirectly affect the welfare of U.S. citizens and residents. Thus, U.S. interests are affected by the climate impacts that occur outside U.S. borders. Examples of affected interests include: direct effects on U.S. citizens and assets located abroad, international trade, tourism, and spillover pathways such as economic and political destabilization and global migration. In addition, assessing the benefits of U.S. GHG mitigation activities requires consideration of how those actions may affect mitigation activities by other countries, as those international mitigation actions will provide a benefit to U.S. citizens and residents by mitigating climate impacts that affect U.S. citizens and residents. Second, the IWG found previously and is restating here that the use of the social rate of return on capital to discount the future benefits of reducing GHG emissions inappropriately underestimates the impacts of climate change for the purposes of estimating the SC-GHG (see Section 3.1). Consistent with the findings of the National Academies (2017) and the economic literature, the IWG continues to conclude that the consumption rate of interest is the theoretically appropriate discount rate in an intergenerational context (IWG 2010, 2013, 2016). The IWG recommends that discount rate uncertainty and relevant aspects of intergenerational ethical considerations be accounted for in selecting future discount rates.

While the IWG works to assess how best to incorporate the latest, peer reviewed science to develop an updated set of SC-GHG estimates, it is setting interim estimates to be the most recent estimates developed by the IWG prior to the group being disbanded in 2017. The IWG concludes that these interim estimates represent the most appropriate estimate of the SC-GHG until the revised estimates have been developed. This update reflects the immediate need to have an operational SC-GHG for use in regulatory benefit-cost analyses and other applications that was developed using a transparent process, peer-reviewed methodologies, and the science available at the time of that process. Those estimates were subject to public comment in the context of dozens of proposed rulemakings as well as in a dedicated public comment period in 2013.

At the same time, consistent with its continuing commitment to a transparent process and a desire to move quickly to update SC-GHG estimates to better reflect the recent science, the IWG will be taking comment on how to incorporate the recommendations of the National Academies (2017) and other recent science, including the advances discussed in this Technical Support Document (TSD), both during the development of the fully updated SC-GHG estimates to be released by January of 2022 and in subsequent updates. The IWG will soon issue a Federal Register notice with a detailed set of requests for public comments on the new information presented in this TSD, as well as other topics and issues the IWG will address as we develop the next set of updates.

This TSD presents the IWG’s interim findings and provides interim estimates of the SC-CO₂, SC-CH₄, and SC-N₂O that should be used by agencies until a comprehensive review and update is developed in line with the requirements in E.O. 13990. The TSD maintains the same methodological approach as has been used for global USG SC-GHG estimation to date. The estimates rely on the same models and harmonized inputs and are calculated using a range of discount rates. At this time, the IWG has determined that it is appropriate for agencies to revert to the same set of four values drawn from the SC-GHG distributions based on three discount rates (2.5 percent, 3 percent, and 5 percent) as were used in regulatory analyses between 2010 and 2016 and subject to public comment. However, as described below, based on the IWG’s initial review, new data and evidence strongly suggests that the discount rate regarded as appropriate for intergenerational analysis is lower.

Tables ES-1, ES-2, and ES-3 summarize the interim SC-CO₂, SC-CH₄, and SC-N₂O estimates, respectively, for the years 2020 through 2050. These estimates are reported in 2020 dollars but are otherwise identical to those presented in the previous version of the TSD and its Addendum, released in August 2016. For purposes of capturing uncertainty around the SC-GHG estimates in analyses, the IWG emphasized previously and reemphasizes here the importance of considering all four of the SC-GHG values. In particular, this TSD discusses how the understanding of discounting approaches suggests discount rates appropriate for intergenerational analysis in the context of climate change that are lower than 3 percent. Consistent with the guidance in E.O. 13990 for the IWG to ensure that the SC-GHG reflect the interests of future generations, the latest scientific and economic understanding of discount rates discussed in this TSD, and the recommendation from OMB’s Circular A-4 to include sensitivity analysis with lower discount rates when a rule has important intergenerational benefits or costs, agencies may consider conducting additional sensitivity analysis using discount rates below 2.5 percent. Furthermore, the IAMs used to produce these interim estimates do not include all of the important physical, ecological, and economic impacts of climate change recognized in the climate change literature. For these same impacts, the science underlying their “damage functions” – i.e., the core parts of the IAMs that map global mean temperature changes and other physical impacts of climate change into economic (both market and nonmarket) damages – lags behind the most recent research. Likewise, the assumptions regarding equilibrium climate sensitivity and socioeconomic and emissions scenarios used as inputs to the model runs in this TSD will need to be updated. It is the IWG’s judgment that, taken together, these limitations suggest that the range of four interim SC-GHG estimates presented in this TSD likely underestimate societal damages from GHG emissions.

Table ES-1: Social Cost of CO₂, 2020 – 2050 (in 2020 dollars per metric ton of CO₂)³

Emissions Year	Discount Rate and Statistic			
	5% Average	3% Average	2.5% Average	3% 95 th Percentile
2020	14	51	76	152
2025	17	56	83	169
2030	19	62	89	187
2035	22	67	96	206
2040	25	73	103	225
2045	28	79	110	242
2050	32	85	116	260

Table ES-2: Social Cost of CH₄, 2020 – 2050 (in 2020 dollars per metric ton of CH₄)

Emissions Year	Discount Rate and Statistic			
	5% Average	3% Average	2.5% Average	3% 95 th Percentile
2020	670	1500	2000	3900
2025	800	1700	2200	4500
2030	940	2000	2500	5200
2035	1100	2200	2800	6000
2040	1300	2500	3100	6700
2045	1500	2800	3500	7500
2050	1700	3100	3800	8200

³ The values reported in this TSD are identical to those reported in the 2016 TSD adjusted for inflation to 2020 dollars using the annual GDP Implicit Price Deflator values in the U.S. Bureau of Economic Analysis' (BEA) NIPA Table 1.1.9: 113.626 (2020)/ 92.486 (2007) = 1.228575 (U.S. BEA 2021). Values are the average across models and socioeconomic emissions scenarios for each of three discount rates (2.5%, 3%, and 5%), plus a fourth value, selected as the 95th percentile of estimates based on a 3 percent discount rate. Values of SC-CO₂ are rounded to the nearest dollar; SC-CH₄ and SC-N₂O are rounded to two significant figures. The annual unrounded estimates are available on OMB's website for use in regulatory and other analyses: <https://www.whitehouse.gov/omb/information-regulatory-affairs/regulatory-matters/#scghgs>

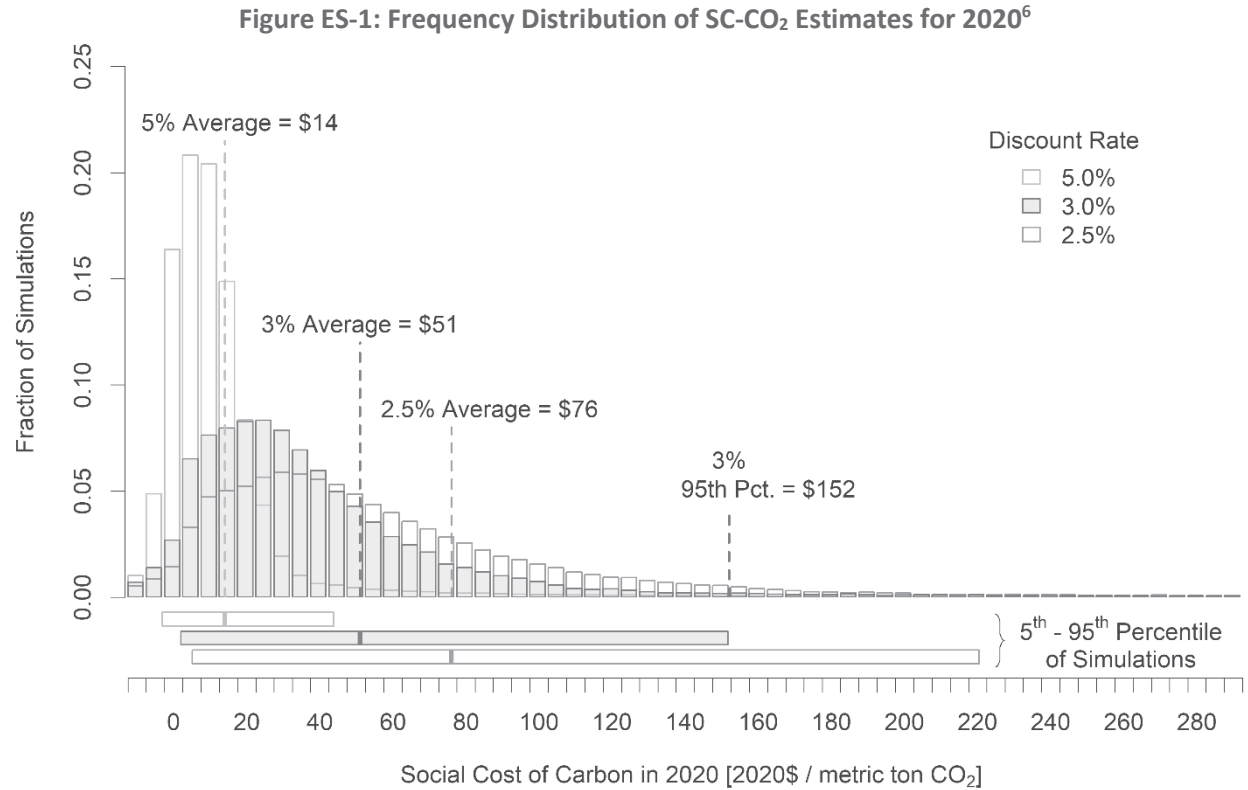
Table ES-3: Social Cost of N₂O, 2020 – 2050 (in 2020 dollars per metric ton of N₂O)

Emissions Year	Discount Rate and Statistic			
	5% Average	3% Average	2.5% Average	3% 95 th Percentile
2020	5800	18000	27000	48000
2025	6800	21000	30000	54000
2030	7800	23000	33000	60000
2035	9000	25000	36000	67000
2040	10000	28000	39000	74000
2045	12000	30000	42000	81000
2050	13000	33000	45000	88000

While point estimates are important for providing analysts with a tractable approach for regulatory analysis, they do not fully quantify uncertainty associated with the SC-GHG estimates. Figures ES-1 through ES-3 present the quantified sources of uncertainty in the form of frequency distributions for the SC-GHG estimates for emissions in 2020. The distributions of SC-GHG estimates reflect uncertainty in key model parameters chosen by the IWG such as the equilibrium climate sensitivity, as well as uncertainty in other parameters set by the original model developers. To highlight the difference between the impact of the discount rate and other quantified sources of uncertainty, the bars below the frequency distributions provide a symmetric representation of quantified variability in the SC-GHG estimates for each discount rate. There are other sources of uncertainty that have not yet been quantified and are thus not reflected in these estimates. When an agency determines that it is appropriate to conduct additional quantitative uncertainty analysis, it should follow best practices for probabilistic analysis.⁴ The full set of information that underlies the frequency distributions in Figures ES-1 through ES-3 is available on OMB's website⁵.

⁴ See e.g. OMB's Circular A-4, section on *Treatment of Uncertainty*. Available at: <https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A4/a-4.pdf>.

⁵ Available at <https://www.whitehouse.gov/omb/information-regulatory-affairs/regulatory-matters/#scghgs>



⁶ Although the distributions and numbers in Figures ES-1, ES-2, and ES-3 are based on the full set of model results (150,000 estimates for each discount rate and gas), for display purposes the horizontal axis is truncated with 0.02 to 0.68 percent of the estimates falling below the lowest bin displayed and 0.12 to 3.11 percent of the estimates falling above the highest bin displayed, depending on the discount rate and GHG.

Figure ES-2: Frequency Distribution of SC-CH₄ Estimates for 2020

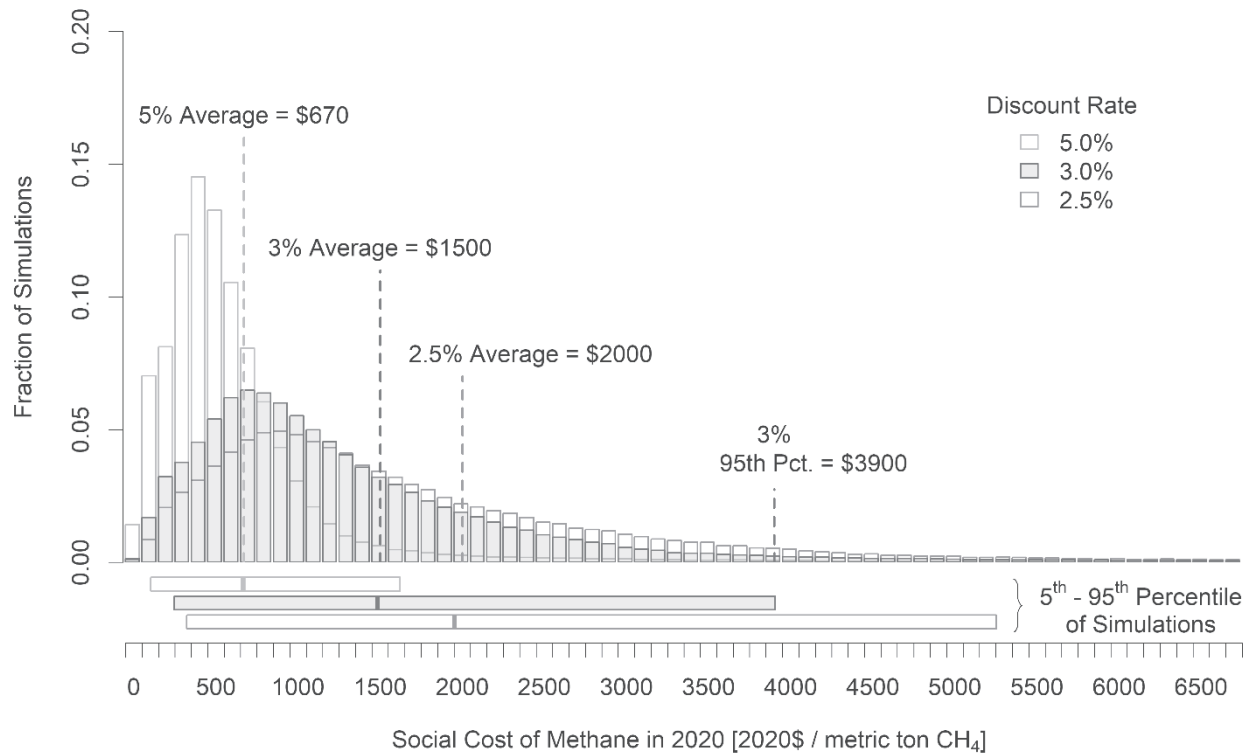
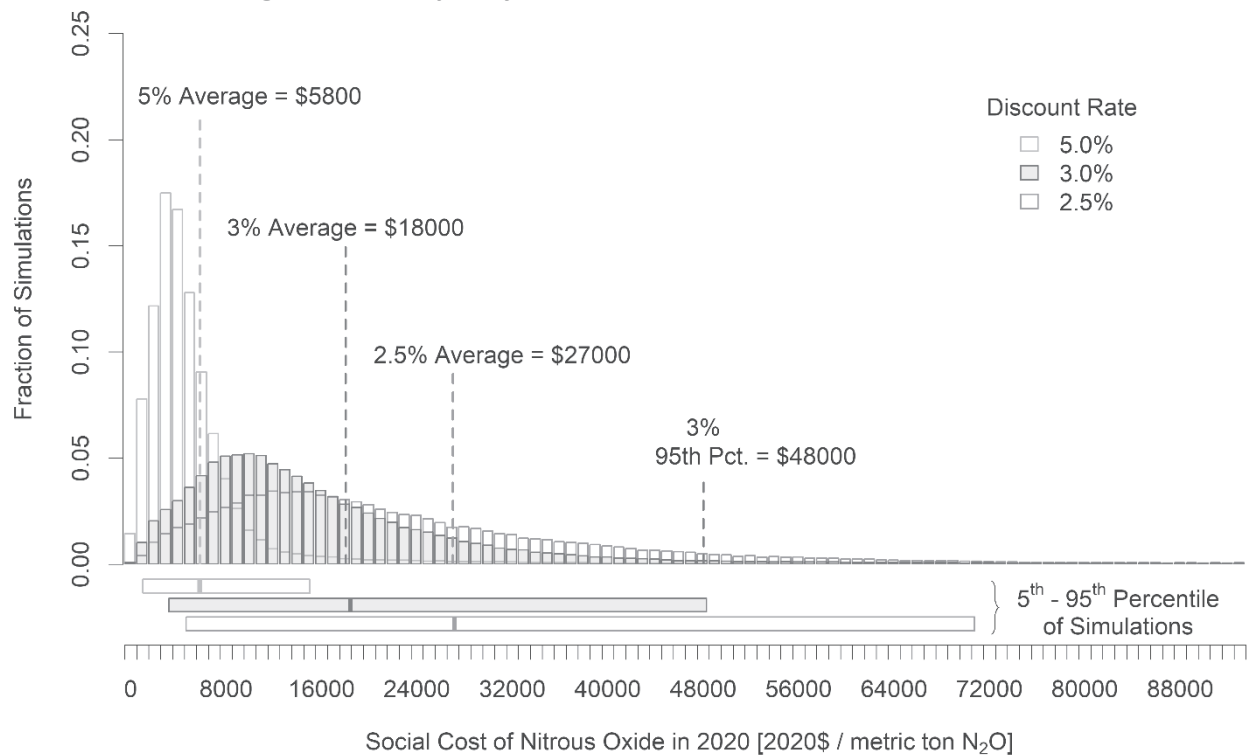


Figure ES-3: Frequency Distribution of SC-N₂O Estimates for 2020



1 Background

The estimates of the social cost of carbon (SC-CO₂), social cost of methane (SC-CH₄), and social cost of nitrous oxide (SC-N₂O) presented here allow agencies to incorporate the social benefits of reducing emissions of each of these greenhouse gases, or the social costs of increasing such emissions, in decision making. Collectively, these values are referenced as the “social cost of greenhouse gases” (SC-GHG) in this document. The SC-GHG is the monetary value of the net harm to society associated with adding a small amount of that GHG to the atmosphere in a given year. In principle, it includes the value of all climate change impacts, including (but not limited to) changes in net agricultural productivity, human health effects, property damage from increased flood risk natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services. The SC-GHG, therefore, should reflect the societal value of reducing emissions of the gas in question by one ton. The marginal estimate of social costs will differ by the type of greenhouse gas (such as carbon dioxide, methane, and nitrous oxide) and by the year in which the emissions change occurs. The SC-GHGs are calculated along a baseline path and provide a measure of the marginal benefit of GHG abatement. Thus, they are the theoretically appropriate values to use when conducting benefit-cost analyses of policies that affect GHG emissions.⁷

1.1 Overview of U.S. Government SC-GHG Estimates to Date

Estimates of the social cost of carbon and other greenhouse gases have been published in the academic literature for many years. Meta-reviews of SC-CO₂ estimates were available as early as 2002 (Clarkson and Deyes 2002). Federal agencies began regularly incorporating SC-CO₂ estimates in regulatory impact analyses in 2008, following a court ruling in which an agency was ordered to consider the SC-CO₂ in the rulemaking process. The U.S. Ninth Circuit Court of Appeals remanded a fuel economy rule to the Department of Transportation (DOT) for failing to consider the value of reducing CO₂ emissions, stating that “while the record shows that there is a range of values, the value of carbon emissions reduction is certainly not zero.”⁸

⁷ These estimates of social damages should not be confused with estimates of the costs of attaining a specific emissions or warming limit. Specifically, there is another strand of research that investigates the costs of setting a specific climate target (e.g., capping emissions or temperature increases to a certain level). If total emissions are capped, IAM models can estimate the costs of limiting emissions or temperature increase to that cap. Similarly, other models simulate market trading in a cap and trade system. The price of a permit to emit one ton of carbon provides a measure of the marginal cost of GHG abatement, which can be useful in evaluating policy cost-effectiveness but is not an alternative way to value damages from GHG emissions in benefit-cost analysis. Moreover, a policy that specifies an environmental target implicitly requires a valuation of damages when setting the constraint even though it is not explicitly modeled or estimated. For example, a target set to keep temperature increases below a certain threshold implicitly places value on damages incurred beyond that threshold. For more on how these concepts (e.g., a predetermined target-based approach and a damage (SC-GHG) based approach) can be used when designing climate policy see, for example, Hansel et al. (2020) and Stern and Stiglitz (2021).

⁸ *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1200 (9th Cir. 2008).

In 2009, an interagency process was launched, under the leadership of the Office of Management and Budget (OMB) and the Council of Economic Advisers (CEA), that sought to harmonize a range of different SC-CO₂ values being used across multiple Federal agencies. The purpose of this process was to ensure that agencies were using the best available information and to promote consistency in the way agencies quantify the benefits of reducing CO₂ emissions in regulatory impact analyses. This included the establishment of an IWG which represented perspectives and technical expertise from many federal agencies and a commitment to following the peer-reviewed literature. In 2010, the IWG finalized a set of four SC-CO₂ values for use in regulatory analyses and presented them in a TSD that also provided guidance for agencies on using the estimates (IWG 2010). Three of these values were based on the average SC-CO₂ from three widely cited integrated assessment models (IAMs) in the peer-reviewed literature – DICE, PAGE, and FUND⁹ – at discount rates of 2.5, 3, and 5 percent. The fourth value was included to represent higher-than-expected economic impacts from climate change further out in the tails of the SC-CO₂ distribution. For this purpose, it used the SC-CO₂ value for the 95th percentile at a 3 percent discount rate.

In May of 2013, the IWG provided an update of the SC-CO₂ estimates to incorporate new versions of the IAMs used in the peer-reviewed literature (IWG 2013). The 2013 update did not revisit other IWG modeling decisions (i.e., the discount rates or harmonized inputs for socioeconomic and emission scenarios and equilibrium climate sensitivity). Improvements in the way damages are modeled were confined to those that had been incorporated into the latest versions of the models by the developers themselves in the peer-reviewed literature.¹⁰ In August of 2016, the IWG published estimates of the social cost of methane (SC-CH₄) and nitrous oxide (SC-N₂O) that are consistent with the methodology underlying the SC-CO₂ estimates (IWG 2016a, 2016b).

Over the course of developing and updating the USG SC-GHG, through both the IWG and individual agencies, there were extensive opportunities for public input on the estimates and underlying methodologies. There was a public comment process associated with each proposed rulemaking that used the estimates, and OMB initiated a separate comment process on the IWG TSD in 2013. Commenters offered a wide range of perspectives on all aspects of process, methodology, and final estimates and diverse suggestions for improvements. The U.S. Government Accountability Office (GAO) also reviewed the development of the USG SC-CO₂ estimates and concluded that the IWG processes and methods reflected three principles: consensus-based decision making, reliance on existing academic literature and models, and disclosure of limitations and incorporation of new information (U.S. GAO 2014).

⁹ The DICE (Dynamic Integrated Climate and Economy) model by William Nordhaus evolved from a series of energy models and was first presented in 1990 (Nordhaus and Boyer 2000, Nordhaus 2008). The PAGE (Policy Analysis of the Greenhouse Effect) model was developed by Chris Hope in 1991 for use by European decision-makers in assessing the marginal impact of carbon emissions (Hope 2006, Hope 2008). The FUND (Climate Framework for Uncertainty, Negotiation, and Distribution) model, developed by Richard Tol in the early 1990s, originally to study international capital transfers in climate policy was widely used to study climate impacts (e.g., Tol 2002a, Tol 2002b, Anthoff et al. 2009, Tol 2009).

¹⁰ The IWG subsequently provided additional minor technical revisions in November of 2013 and July of 2015, as explained in Appendix B of the 2016 TSD (IWG 2016a).

In 2015, as part of the IWG response to the public comments received in the 2013 solicitation, the IWG announced a National Academies of Sciences, Engineering, and Medicine review of the IWG estimates (IWG 2015). Specifically, the IWG asked the National Academies to conduct a multi-discipline, two-phase assessment of the IWG estimates and to offer advice on how to approach future updates to ensure that the estimates continue to reflect the best available science and methodologies. The National Academies' interim (Phase 1) report (National Academies 2016a) recommended against a near term update of the SC-CO₂ estimates within the existing modeling framework. For future revisions, the National Academies recommended the IWG move efforts towards a broader update of the climate system module consistent with the most recent, best available science and offered recommendations for how to enhance the discussion and presentation of uncertainty in the SC-CO₂ estimates. In addition to publishing estimates of SC-CH₄ and SC-N₂O, the IWG's 2016 TSD revision responded to the National Academies' Phase 1 report recommendations regarding presentation of uncertainty. The revisions included: an expanded presentation of the SC-GHG estimates that highlights a symmetric range of uncertainty around estimates for each discount rate; new sections that provide a unified discussion of the methodology used to incorporate sources of uncertainty; detailed explanation of the uncertain parameters in both the FUND and PAGE models; and making the full set of SC-CO₂ estimates easily accessible to the public on OMB's website.

In January 2017, the National Academies released their final report, *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide*, and recommended specific criteria for future updates to the SC-CO₂ estimates, a modeling framework to satisfy the specified criteria, and both near-term updates and longer-term research needs pertaining to various components of the estimation process (National Academies 2017). A description of the National Academies' recommendations for near-term updates are described in Section 1.2 of this document. Shortly thereafter, in March 2017, President Trump issued Executive Order (E.O.) 13783 which called for the rescission and review of several climate-related Presidential and regulatory actions as well as for a review of the SC-GHG estimates used for regulatory impact analysis. E.O. 13783 disbanded the IWG, withdrew the previous TSDs, and directed agencies to ensure SC-GHG estimates used in regulatory analyses are consistent with the guidance contained in OMB's Circular A-4, "including with respect to the consideration of domestic versus international impacts and the consideration of appropriate discount rates" (E.O. 13783, Section 5(c)). Benefit-cost analyses following E.O. 13783 used SC-GHG estimates that attempted to focus on the domestic impacts of climate change as estimated by the models to occur within U.S. borders and were calculated using two discount rates recommended by OMB's Circular A-4, 3 percent and 7 percent.¹¹ All other methodological decisions and model versions used in SC-GHG calculations remained the same as those used by the IWG in 2010 and 2013, respectively.

On January 20, 2021, President Biden issued E.O. 13990, which re-established the IWG and directed it to ensure that USG SC-GHG estimates reflect the best available science and the recommendations of the National Academies (2017). The IWG was tasked with first reviewing the SC-GHG estimates currently used by the USG and publishing interim estimates within 30 days of the E.O. that reflect the full impact of GHG emissions, including by taking global damages into account. The E.O. instructs the IWG to develop final SC-GHG estimates by January 2022. Section 1.3 describes requirements established by E.O. 13990 in greater detail. In addition, the E.O. instructs the IWG to provide recommendations to the President by

¹¹ OMB Circular A-4 (2003) indicates that sensitivity analysis using lower discount rates than 3 percent and 7 percent may be appropriate where intergenerational effects are important. See Section 3 for further discussion.

September 2021, regarding areas of decision-making, budgeting, and procurement by the Federal Government where the SC-GHG should be applied. The SC-GHG has been used previously in non-regulatory Federal analysis, such as in federal procurement,¹² grant programs,¹³ and National Environmental Policy Act (NEPA) analysis,¹⁴ as well as in state level applications; the latter is discussed further in Section 5.

1.2 Recommendations from the National Academies of Sciences, Engineering, and Medicine

In 2015, the IWG requested that the National Academies of Sciences, Engineering, and Medicine review and recommend potential approaches for improving its SC-CO₂ estimation methodology. In response, the National Academies convened a multidisciplinary committee, the Committee on Assessing Approaches to Updating the Social Cost of Carbon. In addition to evaluating the IWG's overall approach to SC-CO₂ estimation, the committee reviewed its choices of IAMs and damage functions, climate science assumptions, future baseline socioeconomic and emission projections, presentation of uncertainty, and discount rates.

In its final report (National Academies 2017), the National Academies committee recommended that the IWG pursue an integrated modular approach to the key components of SC-CO₂ estimation to allow for independent updating and review and to draw more readily on expertise from the wide range of scientific disciplines relevant to SC-CO₂ estimation. Under this approach, each step in SC-CO₂ estimation is developed as a module—socioeconomic projections, climate science, economic damages, and discounting—that reflects the state of scientific knowledge in the current, peer-reviewed literature. In the longer-term, it recommended that the IWG also fund research on ways to better capture interactions and feedbacks between these components. In addition, the committee noted that, while the IWG harmonized assumptions across the IAMs for socioeconomic and emission projections, climate sensitivity, and discount rates when estimating the SC-CO₂, using a single climate module in the nearer-term (2-3 years) and eventually transitioning to a single IAM framework will enhance transparency, improve consistency with the underlying science, and allow for more explicit representation of uncertainty. It recommended these three criteria also be used to judge the value of other updates to the methodology. In addition, it recommended that the IWG update SC-CO₂ estimates at regular intervals, suggesting a five-year cycle.

Regarding the key components of the SC-CO₂, the committee recommended the following improvements in the nearer-term:

- Socioeconomic and emissions projections: Use accepted statistical methods and elicit expert judgment to project probability distributions of future annual growth rates of per-capita GDP and

¹² For example, SC-CO₂ estimates have been used in Domestic Delivery Services contracts for USG parcel shipping (https://westcoastclimateforum.com/sites/westcoastclimateforum/files/related_documents/FedGSA_DDS3_green_features_fact_sheet.pdf).

¹³ For example, in 2016 DOT's Transportation Investment Generating Economic Recovery (TIGER) discretionary grant program required a demonstration that benefits justify costs for proposed projects, and the guidance DOT provides to applicants for how to conduct such an analysis specified that they should use the USG SC-CO₂ estimates (<https://www.transportation.gov/sites/dot.gov/files/docs/BCARG2016March.pdf>).

¹⁴ See Howard and Schwartz (2019) for examples of the use of SC-CO₂ estimates in NEPA analyses.

population, bearing in mind potential correlation between economic and population projections. Then using expert elicitation, guided by information on historical trends and emissions consistent with different climate outcomes, project emissions for each forcing agent of interest conditional on population and income scenarios. Additional recommendations were offered for improving the socioeconomic module centered on four broad criteria: time horizon, future policies, disaggregation, and feedbacks.

- Climate science: Adopt or develop a simple Earth system model (such as the Finite Amplitude Impulse Response (FaIR) model) to capture relationships between CO₂ emissions, atmospheric CO₂ concentrations, and global mean surface temperature change over time while accounting for non-CO₂ forcing and allowing for the evaluation of uncertainty. It also recommended the IWG adopt or develop a sea level rise component in the climate module that: (1) accounts for uncertainty in the translation of global mean temperature to global mean sea level rise and (2) is consistent with sea level rise projections available in the literature for similar forcing and temperature pathways. It also noted the importance of generating spatially and temporally disaggregated climate information as inputs into damage estimation. It recommended the use of linear pattern scaling (which estimates linear relationships between global mean temperature and local climate variables) to achieve this goal in the near-term.
- Economic damages: Improve and update existing formulations of individual sectoral damage functions when feasible; characterize damage function calibrations quantitatively and transparently; present spatially disaggregated damage projections and discuss how they scale with temperature, income, and population; and recognize any correlations between formulations when multiple damage functions are used.
- Discounting: Account for the relationship between economic growth and discounting; explicitly recognize uncertainty surrounding discount rates over long time horizons using a Ramsey-like approach; select parameters to implement this approach that are consistent with theory and evidence to produce certainty-equivalent discount rates consistent with near-term consumption rates of interest; use three sets of Ramsey parameters to generate a low, central, and high certainty-equivalent near-term discount rate, and three means and ranges of SC-CO₂ estimates; discuss how the SC-CO₂ estimates should be combined with other cost and benefit estimates that may use different discount rates in regulatory analysis.

Additional details on each of these recommendations as well as longer term research needs are provided in the National Academies' final report (National Academies 2017).

1.3 Executive Order 13990

On January 20, 2021, President Biden issued E.O. 13990, "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis." Echoing one of the general principles of E.O. 12866 that an Agency "shall base its decisions on the best reasonably obtainable scientific, technical, economic, and other information", E.O. 13990 states that it is essential for Agencies to account for the benefits of reducing GHG emissions as accurately as possible. It emphasizes that a full global accounting of the costs of GHG emissions "facilitates sound decision-making, recognizes the breadth of climate impacts, and supports the international leadership of the United States on climate issues" (E.O. 13990 2021). Specifically, E.O. 13990 reinstates the IWG as the Interagency Working Group on the Social Cost of Greenhouse Gases, names the Chair of the CEA, Director of OMB, and Director of the Office of Science

and Technology Policy (OSTP) as co-chairs of the IWG, and specifies the membership of the IWG to include the following officials, or their designees: the Secretary of the Treasury; the Secretary of the Interior; the Secretary of Agriculture; the Secretary of Commerce; the Secretary of Health and Human Services; the Secretary of Transportation; the Secretary of Energy; the Chair of the Council on Environmental Quality; the Administrator of the Environmental Protection Agency; the Assistant to the President and National Climate Advisor; and the Assistant to the President for Economic Policy and Director of the National Economic Council.

E.O. 13990 tasks the reinstated IWG with the following:

- (1) publish an interim update to the SC-GHG (SC-CO₂, SC-CH₄, and SC-N₂O) estimates by February 19, 2021, for agencies to use when monetizing the value of changes in greenhouse gas emissions resulting from regulations and other relevant agency actions until final values are published;
- (2) publish a final update to the SC-GHG estimates by no later than January 2022;
- (3) provide recommendations, by no later than September 1, 2021, regarding areas of decision-making, budgeting, and procurement by the Federal Government where the SC-GHG estimates should be applied;
- (4) provide recommendations, by no later than June 1, 2022, regarding a process for reviewing and, as appropriate, updating the SC-GHG estimates to ensure that these estimates are based on the best available economics and science; and
- (5) provide recommendations, to be published with the interim SC-GHG estimates if feasible and by no later than June 1, 2022, to revise methodologies for SC-GHG calculations to the extent that current methodologies do not adequately take account of climate risk, environmental justice, and intergenerational equity.

Finally, the E.O. specifies that in carrying out its activities, the IWG shall consider the recommendations of the National Academies (2017) and other pertinent scientific literature; solicit public comment; engage with the public and stakeholders; seek the advice of ethics experts; and ensure that the SC-GHG estimates reflect the interests of future generations in avoiding threats posed by climate change.

This TSD presents the interim SC-GHG estimates called for in the first of these tasks. It also provides preliminary discussion of how at least one component of SC-GHG estimation, discounting, warrants reconsideration in the more comprehensive update by January 2022 to reflect the advice of the National Academies (2017) and other recent scientific literature.

2 The Importance of Accounting for Global Damages

Benefit-cost analyses of U.S. Federal regulations have traditionally focused on the benefits and costs that accrue to individuals that reside within the country's national boundaries. This is a natural result of the fact that most regulations have a limited impact on individuals residing outside of the United States and do not reflect any other scientific, legal, or other rationale. According to OMB's Circular A-4 (2003), an

“analysis should focus on benefits and costs that accrue to citizens and residents of the United States.”¹⁵ While Circular A-4 does not elaborate, this guidance towards a focus on U.S. populations in domestic policy analysis is broadly consistent with the fact that the authority to regulate only extends to a nation’s own residents who have consented to adhere to the same set of rules and values for collective decision-making (EPA 2010; Kopp et al. 1997; Whittington and MacRae 1986). However, guidance towards a focus on impacts to U.S. citizens and residents is different than recommending that analysis be limited to the impacts that occur within the borders of the U.S. Furthermore, OMB Circular A-4 states that when a regulation is likely to have international effects that “these effects should be reported” though the guidance recommends this be done separately. There are many reasons, as summarized in this TSD, why it is appropriate for agencies to use the global value of damages in making decisions that affect, or may be affected by, GHG emissions. Courts have upheld the use of global damages in estimating the social cost of GHGs, in part in recognition of the diverse ways in which U.S. interests, businesses, and residents may be impacted by climate change beyond U.S. borders.¹⁶

Unlike many environmental problems where the causes and impacts are distributed more locally, climate change is a true global challenge making GHG emissions a global externality. GHG emissions contribute to damages around the world regardless of where they are emitted. The global nature of GHGs means that U.S. interests, and therefore the benefits to the U.S. population of GHG mitigation, cannot be defined solely by the climate impacts that occur within U.S. borders. Impacts that occur outside U.S. borders as a result of U.S. actions can directly and indirectly affect the welfare of U.S. citizens and residents through a multitude of pathways. Over 9 million U.S. citizens lived abroad as of 2016¹⁷ and U.S. direct investment positions abroad totaled nearly \$6 trillion in 2019.¹⁸ Climate impacts occurring outside of U.S. borders will have a direct impact on these U.S. citizens and the investment returns on those assets owned by U.S. citizens and residents. The U.S. economy is also inextricably linked to the rest of the world. The U.S. exports over \$2 trillion worth of goods and services a year and imports around \$3 trillion.¹⁹ Climate impacts that occur outside U.S. borders can thus impact the welfare of individuals and firms that reside in the United States through their effect on international markets, trade, tourism, and other activities. Furthermore, additional spillovers can occur through pathways such as economic and political destabilization and global migration that can lead to adverse impacts on U.S. national security, public health, and humanitarian concerns (DoD 2014, CCS 2018). As described by the National Academies (2017), to correctly assess the total damages to U.S. citizens and residents, one must account for these spillover effects on the United States.

As an empirical matter, the development of a domestic SC-GHG is greatly complicated by the relatively few region- or country-specific estimates of the SC-CO₂ in the literature. At present, the only quantitative

¹⁵ OMB’s Circular A-4 provides guidance to Federal agencies on the development of regulatory analysis conducted pursuant to Executive Order 12866.

¹⁶ *Zero Zone, Inc. v. Dep’t of Energy*, 832 F.3d 654, 678-79 (7th Cir. 2016) (rejecting a petitioner’s challenge to DOE’s use of a global (rather than domestic) social cost of carbon in setting an efficiency standard under the Energy Policy and Conservation Act, holding that DOE had reasonably identified carbon pollution as “a global externality” and concluding that, because “national energy conservation has global effects, . . . those global effects are an appropriate consideration when looking at a national policy.”).

¹⁷ U.S. Department of State’s Bureau of Consular Affairs.

¹⁸ BEA Direct Investment by Country and Industry 2019, <https://www.bea.gov/data/intl-trade-investment/direct-investment-country-and-industry>

¹⁹ BEA National Income and Product Accounts Table 1.1.5.

characterization of domestic damages from GHG emissions, as represented by the domestic SC-GHG, is based on the share of damages arising from climate impacts occurring within U.S. borders as represented in current IAMs. This is both incomplete and an underestimate of the share of total damages that accrue to the citizens and residents of the U.S. because these models do not capture the regional interactions and spillovers discussed above. A 2020 U.S. GAO study observed that “[a]ccording to the National Academies, the integrated assessment models were not premised or calibrated to provide estimates of the social cost of carbon based on domestic damages, and more research would be required to update the models to do so. The National Academies stated it is important to consider what constitutes a domestic impact in the case of a global pollutant that could have international implications that affect the United States” (U.S. GAO 2020).

The global nature of GHGs means that damages caused by a ton of emissions in the U.S. are felt globally and that a ton emitted in any other country harms those in the U.S. Therefore, assessing the benefits of U.S. GHG mitigation activities will require consideration of how those actions may affect mitigation activities by other countries since those international actions will provide a benefit to U.S. citizens and residents. A wide range of scientific and economic experts have emphasized the issue of reciprocity as support for considering global damages of GHG emissions (e.g., Kopp and Mignone 2013, Pizer et al. 2014, Howard and Schwartz 2019, Pindyck 2017, Revesz et al. 2017, Carleton and Greenstone 2021). Carleton and Greenstone (2021) discuss examples of how historic use of a global SC-CO₂ may have plausibly contributed to additional international action. Houser and Larson (2021) estimate that under the Paris Agreement, other countries pledged to reduce 6.1 to 6.8 tons for every ton pledged by the U.S. Kotchen (2018) offers a theoretical perspective showing that non-Nash game theoretic behavior can lead countries to optimally chose a social cost of carbon higher than their domestic value to encourage additional reductions from other countries. Using a global estimate of damages in U.S. analyses of regulatory and other actions allows the U.S. to continue to actively encourage other nations, including emerging major economies, to take significant steps to reduce emissions.

The IWG found previously and is restating here that because of the distinctive global nature of climate change that analysis of Federal regulatory and other actions should center on a global measure of SC-GHG. This approach is the same as that taken in regulatory analyses over 2009 through 2016. In the 2015 response to comments, the IWG noted that the only way to achieve an efficient allocation of resources for emissions reduction on a global basis is for all countries to base their policies on global estimates of damages (IWG 2015). Therefore, the IWG continues to recommend the use of global SC-GHG estimates in analysis of Federal regulatory and other actions. The IWG also continues to review developments in the literature, including more robust methodologies for estimating SC-GHG values based on purely domestic damages, and explore ways to better inform the public of the full range of carbon impacts, both global and domestic.

3 Discounting in Intergenerational Analyses

GHG emissions are stock pollutants, where damages are associated with what has accumulated in the atmosphere over time, and they are long lived such that subsequent damages resulting from emissions today occur over many decades or centuries depending on the specific greenhouse gas under

consideration.²⁰ In calculating the SC-GHG, the stream of future damages to agriculture, human health, and other market and non-market sectors from an additional unit of emissions are estimated in terms of reduced consumption (or consumption equivalents). Then that stream of future damages is discounted to its present value in the year when the additional unit of emissions was released. Given the long time horizon over which the damages are expected to occur, the discount rate has a large influence on the present value of future damages. However, the choice of a discount rate also raises highly contested and exceedingly difficult questions of science, economics, ethics, and law.

In 2010, in light of disagreements in the literature on the appropriate discount rate to use in this context, and uncertainty about how rates may change over time, the IWG elected to use three discount rates to span a plausible range of certainty-equivalent constant consumption discount rates: 2.5, 3, and 5 percent per year. The IWG at that time determined that these three rates reflected reasonable judgments under both descriptive and prescriptive approaches to selecting the discount rate.

The 3 percent value was included as consistent with estimates provided in OMB's Circular A-4 (OMB 2003) guidance for the consumption rate of interest. The IWG found that the consumption rate of interest is the correct discounting concept to use when future damages from elevated temperatures are estimated in consumption-equivalent units as is done in the IAMs used to estimate the SC-GHG (National Academies 2017). The upper value of 5 percent was included to represent the possibility that climate-related damages are positively correlated with market returns, which would imply a certainty equivalent value higher than the consumption rate of interest. The low value, 2.5 percent, was included to incorporate the concern that interest rates are highly uncertain over time. It represents the average certainty-equivalent rate using the mean-reverting and random walk approaches from Newell and Pizer (2003) starting at a discount rate of 3 percent. Using this approach, the certainty equivalent is about 2.2 percent using the random walk model and 2.8 percent using the mean reverting approach. Without giving preference to a particular model, the average of the two rates is 2.5 percent. Additionally, a rate below the consumption rate of interest would also be justified if the return to investments in climate mitigation are negatively correlated with the overall market rate of return. Use of this lower value was also deemed responsive to certain judgments based on the prescriptive or normative approach for selecting a discount rate and to related ethical objections that have been raised about rates of 3 percent or higher. Further details about the process for selecting these rates is presented in the 2010 TSD (IWG 2010). Finally, it is important to note that, while the consumption discount rate is the conceptually correct rate for discounting the SC-GHG, and the three rates originally selected were based on this concept, the latest data as well as recent discussion in the economics literature indicates that the 3 percent discount rate used by the IWG to develop its range of discount rates is likely an overestimate of the appropriate discount rate and warrants reconsideration in future updates of the SC-GHG.

This section discusses three issues related to the selected discount rates: (1) why the social rate of return to capital, estimated to be 7 percent in OMB's Circular A-4, is not appropriate for use in calculating the SC-GHG, (2) new evidence on the consumption rate of interest, which may inform the future updates to the SC-GHG, and (3) analytic consistency across discounting within an analysis.

²⁰ "GHGs, for example, CO₂, methane, and nitrous oxide, are chemically stable and persist in the atmosphere over time scales of a decade to centuries or longer, so that their emission has a long-term influence on climate. Because these gases are long lived, they become well mixed throughout the atmosphere" (IPCC 2007).

3.1 Social Rate of Return on Capital and Intergenerational Analyses

When analyzing policies and programs that result in GHG emission reductions, it is important to account for the difference between the social and private rate of return on any capital investment affected by the action. Society is not indifferent between a regulation that displaces consumption versus investment in equal amounts. Market distortions, in large part taxes on capital income, cause private returns on capital investments to be different from the social returns. In well-functioning capital markets, arbitrage opportunities will be dissipated, and the cost of investments will equal the present value of future private returns on those investments. Therefore, an individual forgoing consumption or investment of equal amounts as the result of a regulation will face an equal private burden. However, because the social rate of return on the investment is greater than the private rate of return, the overall social burden will be greater in the case where investment is displaced.

OMB's Circular A-4 points out that "the analytically preferred method of handling temporal differences between benefits and costs is to adjust all the benefits and costs to reflect their value in equivalent units of consumption and to discount them at the rate consumers and savers would normally use in discounting future consumption benefits" (OMB 2003). The damage estimates developed for use in the SC-GHG are estimated in consumption-equivalent terms. An application of OMB Circular A-4's guidance for regulatory analysis would then use the consumption discount rate to calculate the SC-GHG, while also developing a more complete estimate of social cost to account for the difference in private and social rates of return on capital for any investment displaced as a result of the regulation. This more complete estimate of social costs can be developed using either the shadow price of capital approach or by estimating costs in a general equilibrium framework, for example by using a computable general equilibrium model. In both cases, displaced investment would be converted into a flow of consumption equivalents.

In cases where the costs are not adjusted to be in consumption-equivalent terms, OMB's Circular A-4 recommends that analysts provide a range of estimates for net benefits based on two approaches. The first approach is based on using the consumption rate of interest to discount all costs and benefits. This approach is consistent with the case where costs are primarily borne as reduced consumption. The second approach, the social opportunity cost of capital (SOC) approach, focuses on the case where the main effect of a regulation is to displace or alter the use of capital in the private sector (OMB 2003). When interpreting the SOC approach from the point of view of whether to invest in a single government project, it is asking whether the benefits from the project would at least match the returns from investing the same resources in the private sector. Interpreting the approach from the standpoint of a benefit-cost analysis of regulation, the approach focuses on adjusting estimates of benefits downward by discounting at a higher rate to offset additional social costs not reflected in the private value of displaced investment.

Harberger (1972) derived a more general version of the social opportunity cost of capital approach, recognizing that policies will most likely displace a mix of consumption and investment and therefore a blended discount rate would be needed to adjust the benefits to account for the omitted costs. In his partial equilibrium approach, the blended discount rate is a weighted average of the consumption interest rate and social rate of return on capital, where the weights are the share of a policy's costs borne by consumption versus investment. This general result has been extended to the general equilibrium context by Sandmo and Drèze (1971) and Drèze (1974) and can be extended to account for changes in foreign direct investment (CEA 2017). This highlights that using the social rate of return for benefits and costs is at best creating a lower bound on the estimate of net benefits that would only be met in an extreme case

where regulatory costs fully displace investment. If the beneficial impacts of the regulation induce private investment whose social returns have not been quantified and fully converted to consumption equivalents, then the net benefits calculated using the social rate of return on capital is not even a lower bound.²¹ Li and Pizer (2021) further generalize the SOC framework and demonstrate that temporal pattern of benefits is important and that when benefits occur far in the future discounting using the social rate of return on capital again is not even a lower bound on net benefits.

For regulations whose benefits and costs occur over a relatively short time frame, the range of net benefits computed using the two discounting approaches will be relatively narrow. Therefore, there is less risk in maintaining an uninformed prior over the share of regulatory costs that will displace investment and using the potential bounding cases for net benefits. However, for cases where the costs are borne early in the time horizon and benefits occur for decades or even centuries, such as with GHG mitigation, the two estimates of net benefits will differ significantly. In this case, the risk to society of maintaining an uninformed prior over the share of regulatory costs borne by investment is significantly higher. In turn, the preferred approach is to discount benefits using the consumption rate of interest and strive to provide a more complete measure of costs, accounting for displacement of investment whose social rate of return exceeds the private rate of return, either by using a shadow price of capital approach or a general equilibrium framework, like a computable general equilibrium model.

It is important to note that even if an appropriately specified blended SOC rate could be calculated based on the share of regulatory costs that are expected to displace investment that would not obviate the need to carefully consider issues of uncertainty and ethics when discounting in an intergenerational context, pointing to a lower rate.

For these reasons, the IWG is returning to the approach of calculating the SC-GHG based on the consumption rate of interest, consistent with the findings of the National Academies (2017)²².

3.2 New Evidence on the Consumption Discount Rate

The three discount rates selected by the IWG in 2010 are centered around the 3 percent estimate of the consumption interest rate published in OMB's Circular A-4 in 2003. That guidance was based on the real rate of return on 10-year Treasury Securities from the prior 30 years (1973 through 2002), which averaged 3.1 percent. Over the past four decades there has been a substantial and persistent decline in real interest rates (see Figure 1). Recent research has found that this decline has been driven by decreases in the equilibrium real interest rate (Bauer and Rudebusch 2020).

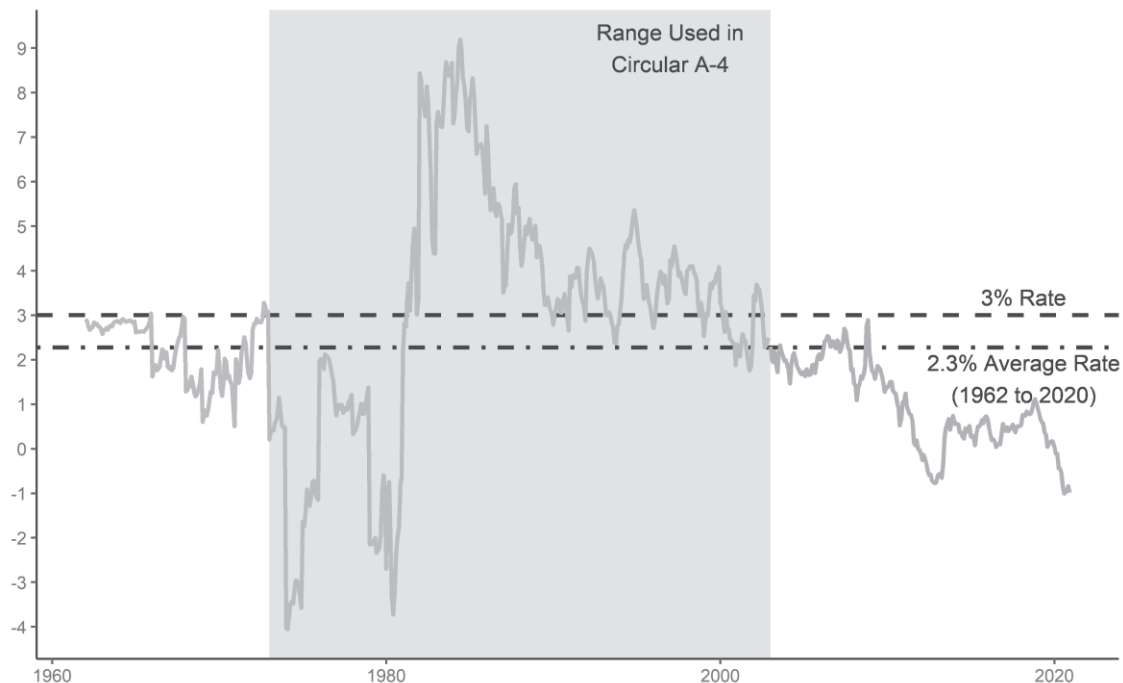
Re-estimating the consumption rate of interest following the same approach applied in Circular A-4, including using data from the most recent 30 years, yields a substantially lower result. The average rate

²¹ The SOC approach as outlined in OMB's Circular A-4 is most applicable to cases where the benefits are represented as consumption equivalents and costs may not be. If the benefits of the policy include the inducement of new private investment, discounting both benefits and costs at the social rate of return for capital is no longer appropriate. The results of Bradford (1975) show that in a case where regulatory costs are primarily borne through reduced consumption and the beneficial impacts of the policy may induce private investment the appropriate rate under the SOC approach could be below the consumption interest rate.

²² NAS (2017) stated "The estimates that result from the SC-IAMs are measured in consumption- equivalent units: thus, a discount rate that reflects how individuals trade off current and future consumption is defensible in this setting" (p. 236-7).

of return on inflation adjusted 10-year Treasury Securities over the last 30 years (1991-2020) is 2.0 percent. These rates are not without historic precedent, such that over the last 60 years the inflation adjusted 10-year Treasury Securities is 2.3 percent. Current real rates of returns below 2 percent are expected to persist. The U.S. Congressional Budget Office (CBO) in its September 2020 Long Term Budget Outlook forecasts real rates of return on 10-Year Treasury Securities to average 1.2 percent over the next 30 years (U.S. CBO 2020). This new information suggests that the consumption rate of interest is notably lower than 3 percent. CEA (2017) examined additional forecasts of 10-Year Treasury Securities and data on futures contracts, reaching the conclusion that the appropriate consumption discount rate should be at most 2 percent.

Figure 1: Monthly 10-Year Treasury Security Rates, Inflation-Adjusted²³



Several surveys have been conducted in recent years to elicit experts' views on the appropriate discount rates to use in an intergenerational context (e.g., Drupp et al. 2018; Howard and Sylvan 2020). For example, Drupp et al. (2018) offers confirming evidence that the economics profession generally agrees that the appropriate social discount rate is below 3 percent as reflected in the recent trends in data. They surveyed over 200 experts and found a "surprising degree of consensus among experts, with more than three-quarters finding the median risk-free social discount rate of 2 percent acceptable" (Drupp et al. 2018).²⁴

²³ Monthly 10-Year Treasury Security returns, adjusted for inflation. Real interest rates prior to 2003 (green line) are calculated by subtracting the annual rate of inflation as measured by the CPI-U from the nominal rate of return on 10-Year constant maturity Treasury Securities. Interest rates from 2003 onwards (brown line) are based on the 10-Year Treasury Inflation-Protected Securities.

²⁴ For a detailed explanation of discounting concepts and terminology see EPA's *Guidelines for Preparing Economic Analysis* (2010). <https://www.epa.gov/environmental-economics/guidelines-preparing-economic-analyses>

It is important to note that the new information pointing to a lower consumption rate of interest, lower than 3 percent, does not obviate the need to carefully consider issues of uncertainty and ethics when discounting in an intergenerational context.²⁵ If 2 percent was used as the consumption interest rate and adjusted for uncertainty using the results of Newell and Pizer (2003) as was done in the 2010 TSD, the process would yield a discount rate lower than 2 percent. Therefore, a consideration of discount rates below 3 percent, including 2 percent and lower, are warranted when discounting intergenerational impacts.

This is consistent with the 2003 recommendation in OMB's Circular A-4 that noted "[a]lthough most people demonstrate time preference in their own consumption behavior, it may not be appropriate for society to demonstrate a similar preference when deciding between the well-being of current and future generations" and found that certainty equivalent discount rates as low as 1 percent could be appropriate for intergenerational problems (OMB 2003). Similarly, if implementing a declining discount rate schedule to account for uncertainty (see next section), an updated consumption rate of interest, based on additional data presented above, may be a starting point for an update.

In light of the evidence and discussion on discount rates presented in this TSD and elsewhere, the recommendation from OMB's Circular A-4 to include further sensitivity analysis with lower discount rates when a rule has important intergenerational benefits or costs, and the direction to the IWG in E.O. 13990 to ensure that the SC-GHG reflect the interest of future generations, the IWG finds it appropriate as an interim recommendation that agencies may consider conducting additional sensitivity analysis using discount rates below 2.5%.

3.3 Analytic Consistency and Declining Discount Rates

While the consumption rate of interest is an important driver of the benefits estimate, it is uncertain over time, as may be observed in Figure 1. Weitzman (1998, 2001) showed theoretically and Newell and Pizer (2003) and Groom et al. (2005) confirmed empirically that discount rate uncertainty can have a large effect on net present values. A main result from these studies is that if there is a persistent element to the uncertainty in the discount rate (e.g., the rate follows a random walk), then it will result in an effective (or certainty-equivalent) discount rate that declines over time. This is because lower discount rates tend to dominate over the very long term (see Weitzman 1998, 1999, 2001; Newell and Pizer 2003; Groom et al. 2005; Gollier 2009; Summers and Zeckhauser 2008; Gollier and Weitzman 2010; Arrow et al. 2013; Cropper et al. 2014; and Arrow et al. 2014).

The proper way to specify a declining discount rate schedule remains an active area of research. One approach is to develop a stochastic model of interest rates that is empirically estimated and used to calculate the certainty equivalent declining discount rate schedule (e.g., Newell and Pizer 2003; Groom et al. 2007). An alternative approach is to use the Ramsey equation based on a forecast of consumption growth rates that accounts for uncertainty (e.g., Cropper et al. 2014; Arrow et al. 2013). If the shocks to consumption growth are positively correlated over time then the result of the Ramsey equation will be a certainty-equivalent discount rate schedule that declines over time (Goiller 2014). Others have argued for a less structural approach to specify a declining discount rate schedule (e.g., Weitzman 2001, the United

²⁵ For a more detailed explanation of ethical and uncertainty considerations around discounting see National Academies (2017) and the 2010 TSD (IWG 2010).

Kingdom’s “Green Book” for regulatory analysis (HM Treasury 2020), the declining discount schedule in France (Lebègue 2005) and varying the discount rate based on the time period in Germany (Schwermer 2012, U.S. GAO 2020)). This approach uses a higher discount rate initially, like the current estimate of the consumption interest rate, but applies a graduated scale of lower discount rates further out in time.²⁶

Instead of explicitly specifying a declining discount rate schedule, the IWG in 2010 elected to use a constant but lower discount rate to capture the directional effect of the literature on discounting under uncertainty. Specifically, the IWG considered two declining discount rate schedules based on the mean-reverting and random walk models from Newell and Pizer (2003) starting at a discount rate of 3 percent. The 2.5 percent discount rate selected by the IWG in 2010 reflected the midpoint between the average certainty equivalent discount rates of both models. The approach of using a lower, but constant, discount rate to capture the effect of uncertainty has led to inconsistency in regulatory analyses, where impacts occurring in a given year are discounted at different rates depending on whether they are related to climate change (Arrow et al. 2014). The National Academies (2017) and EPA’s Science Advisory Board (2021) have recommended that the U.S. Government establish an explicit declining discount rate schedule that is applied to all regulatory impacts in an analysis to capture the effect of uncertainty on long-term discount rates, while also maintaining consistency across impact categories in the analysis. The IWG will consider the literature on declining discount rates and the recommendations of the National Academies (2017) and EPA’s Science Advisory Board (2021) as it develops future updates to the SC-GHG. In the interim, the IWG is returning to the use of the 2.5, 3, and 5 percent discount rates in calculating the SC-GHG but recommends that agencies describe potential limitations in their analyses to ensure transparency. As noted above, agencies may also consider discount rates below 2.5 percent as part of a sensitivity analysis.

4 Interim Estimates of SC-CO₂, SC-CH₄, SC-N₂O

The interim SC-GHG estimates presented in this TSD rely on the same models and harmonized inputs for the socioeconomic emissions scenarios and equilibrium climate sensitivity distribution used for USG SC-GHG estimates since 2013. Specifically, the SC-GHG estimates rely on an ensemble of three IAMs: Dynamic Integrated Climate and Economy (DICE) 2010 (Nordhaus 2010); Climate Framework for Uncertainty, Negotiation, and Distribution (FUND) 3.8 (Anthoff and Tol 2013a, 2013b); and Policy Analysis of the Greenhouse Gas Effect (PAGE) 2009 (Hope 2013). IAMs are useful because they combine climate processes, economic growth, and feedback between the climate and the global economy into a single modeling framework. They gain this advantage at the expense of a more detailed representation of underlying climatic and economic systems. DICE, PAGE, and FUND all take stylized, reduced-form approaches and have been widely used in the economic and scientific literature since the 1990s. They are periodically updated by the model developers, but as discussed further in Section 5, the versions of the three models used in the 2013 and 2016 TSDs do not reflect the tremendous increase in the scientific and economic understanding of climate-related damages that has occurred in the past decade. The three IAMs

²⁶ For instance, the United Kingdom applies a discount rate of 3.5 percent to the first 30 years; 3 percent for years 31 - 75; 2.5 percent for years 76 - 125; 2 percent for years 126 - 200; 1.5 percent for years 201 - 300; and 1 percent after 300 years. As a sensitivity, it recommends a discount rate of 3 percent for the first 30 years, also decreasing over time.

were run using a common set of assumptions in each model for future population, economic, and GHG emissions growth, as well as equilibrium climate sensitivity (ECS) – a measure of the globally averaged temperature response to increased atmospheric CO₂ concentrations. The socioeconomic and emission projections included five reference scenarios based on the Stanford Energy Modeling Forum EMF-22 modeling exercise (Clarke, et al. 2009; Fawcett, et al. 2009). The models were run using a probability distribution for ECS, calibrated to the Intergovernmental Panel on Climate Change’s (IPCC) Fourth Assessment Report findings using the Roe and Baker (2007) distribution. Details on these versions of the IAMs and the harmonized inputs are presented in the 2016 TSD and Addendum and 2010 TSD. (IWG 2010, 2016a, 2016b). The 2016 Addendum also describes the methodology used to calculate the SC-CH₄ and SC-N₂O estimates in greater detail.²⁷ Finally, for the reasons set forth in Section 3 above, the interim estimates were based on three constant discount rates of 2.5, 3, and 5 percent.

The combination of three models and five scenarios produced 15 separate frequency distributions of SC-GHG estimates for each discount rate in a given year, with each distribution consisting of 10,000 estimates based on draws from the standardized ECS distribution (as well as distributions of parameters treated as uncertain in two of the models (FUND and PAGE)). For each discount rate, the IWG combined the distributions across models and socioeconomic emissions scenarios (applying equal weight to each) and then selected a set of four values for use in benefit-cost analyses: an average value resulting from the model runs for each of three discount rates (2.5%, 3%, and 5%), plus a fourth value, selected as the 95th percentile of estimates based on a 3 percent discount rate. The fourth value was included to provide information on potentially higher-than-expected economic impacts from climate change, conditional on the 3% estimate of the discount rate. For this purpose, the SC-GHG value for the 95th percentile at a 3 percent discount rate was presented.²⁸ For the purposes of capturing the uncertainties involved in analyses, the IWG emphasized previously and emphasizes in this TSD the importance and value of including all four SC-GHG values. In particular, values based on lower discount rates are consistent with the latest scientific and economic understanding of discounting approaches relevant for intergenerational analysis (described in Section 3).

Tables 1-3 show the four selected values for SC-CO₂, SC-CH₄, and SC-N₂O, respectively, in five-year increments from 2020 to 2050. These estimates are reported in 2020 dollars but are otherwise identical to those presented in the previous version of the TSD and its Addendum, released in August 2016.²⁹ The

²⁷ The IWG calculated the SC-CH₄ and SC-N₂O estimates following the approach used in Marten et al. (2015). In order to develop SC-CH₄ and SC-N₂O estimates consistent with the methodology underlying the SC-CO₂ estimates, Marten et al. (2015) needed to augment the IWG modeling framework in two respects: (1) augment the climate model of two of the IAMs to explicitly consider the path of additional radiative forcing from a CH₄ or N₂O perturbation, and (2) add more specificity to the assumptions regarding post-2100 baseline CH₄ and N₂O emissions. See IWG (2016b) for more discussion of these two modeling modifications and the peer review and public comment processes accompanying their development.

²⁸ A detailed set of percentiles by model and scenario combination and additional summary statistics for the 2020 values is available in the 2016 TSD and Addendum (IWG 2016a, 2016b).

²⁹ The values in Tables 1-3 are the same as those reported in the 2016 TSD and Addendum adjusted for inflation to 2020 dollars using the annual GDP Implicit Price Deflator values in U.S. Bureau of Economic Analysis (BEA) NIPA Table 1.1.9: 113.626 (2020)/ 92.486 (2007) = 1.228575 (U.S. BEA 2021). Values of SC-CO₂ presented in this TSD are rounded to the nearest dollar; SC-CH₄ and SC-N₂O are rounded to two significant figures. The annual unrounded estimates are available on OMB’s website for use in regulatory and other analyses: <https://www.whitehouse.gov/omb/information-regulatory-affairs/regulatory-matters/#scghgs>.

full set of annual SC-GHG values between 2020 and 2050, calculated using linear interpolation between the numbers shown in Tables 1-3, is reported in the Appendix and the full set of model results are available on the OMB website.³⁰ The SC-GHG estimates increase over time within the models – i.e., the societal harm from one metric ton emitted in 2030 is higher than the harm caused by one metric ton emitted in 2025 – because future emissions produce larger incremental damages as physical and economic systems become more stressed in response to greater climatic change, and because GDP is growing over time and many damage categories are modeled as proportional to GDP.

Table 1: Social Cost of CO₂, 2020 – 2050 (in 2020 dollars per metric ton of CO₂)³¹

Emissions Year	Discount Rate and Statistic			
	5% Average	3% Average	2.5% Average	3% 95 th Percentile
2020	14	51	76	152
2025	17	56	83	169
2030	19	62	89	187
2035	22	67	96	206
2040	25	73	103	225
2045	28	79	110	242
2050	32	85	116	260

Table 2: Social Cost of CH₄, 2020 – 2050 (in 2020 dollars per metric ton of CH₄)

Emissions Year	Discount Rate and Statistic			
	5% Average	3% Average	2.5% Average	3% 95 th Percentile
2020	670	1500	2000	3900
2025	800	1700	2200	4500
2030	940	2000	2500	5200
2035	1100	2200	2800	6000
2040	1300	2500	3100	6700
2045	1500	2800	3500	7500
2050	1700	3100	3800	8200

³⁰ <https://www.whitehouse.gov/omb/information-regulatory-affairs/regulatory-matters/#scghgs>

³¹ The values reported in this TSD are identical to those reported in the 2016 TSD adjusted for inflation to 2020 dollars using the annual GDP Implicit Price Deflator values in the U.S. Bureau of Economic Analysis' (BEA) NIPA Table 1.1.9: 113.626 (2020)/ 92.486 (2007) = 1.228575 (U.S. BEA 2021). The IWG combined the distributions across models and socioeconomic emissions scenarios for each of three discount rates (2.5%, 3%, and 5%), plus a fourth value, selected as the 95th percentile of estimates based on a 3 percent discount rate. Values of SC-CO₂ are rounded to the nearest dollar; SC-CH₄ and SC-N₂O are rounded to two significant figures. The annual unrounded estimates are available on OMB's website for use in regulatory and other analyses: <https://www.whitehouse.gov/omb/information-regulatory-affairs/regulatory-matters/#scghgs>.

Table 3: Social Cost of N₂O, 2020 – 2050 (in 2020 dollars per metric ton of N₂O)

Emissions Year	Discount Rate and Statistic			
	5% Average	3% Average	2.5% Average	3% 95 th Percentile
2020	5800	18000	27000	48000
2025	6800	21000	30000	54000
2030	7800	23000	33000	60000
2035	9000	25000	36000	67000
2040	10000	28000	39000	74000
2045	12000	30000	42000	81000
2050	13000	33000	45000	88000

Multiplying the SC-GHG in year t by the change in emissions in year t yields the monetized value of future emission changes from a year t perspective. This value must then be discounted to the present before being included in an analysis. For this purpose, the monetized value of future emission changes should be discounted at the same rate used to calculate the initial SC-GHG to ensure internal consistency—i.e., future damages from climate change using the SC-GHG at 2.5 percent should be discounted to the base year of the analysis using the same 2.5 percent rate.

As noted above, to correctly assess the total climate damages to U.S. citizens and residents, an analysis must account for both the impacts that occur within U.S. borders and spillover effects from climate action elsewhere. For the reasons discussed in Section 2 above, estimates focusing on the climate impacts occurring within U.S. borders are an underestimate of the benefits of GHG mitigation accruing to U.S. citizens and residents and, therefore, are not equivalent to a domestic estimate of the SC-GHG. (Section 2 also discusses why analyses should center their attention on a global measure of the SC-GHG). Additionally, models differ in their treatment of regional damages³² with one of the model developers recently noting that regional damages are “both incomplete and poorly understood” (Nordhaus 2017). The IWG further notes that the domestic focused SC-GHG estimates used under E.O. 13783³³ did not

³² Both the PAGE and FUND model contain a U.S. region and so the damages for this region are reported directly for those models. The DICE 2010 model does not explicitly include a separate U.S. region in the model. For the domestic focused SC-GHG estimates used under E.O. 13783, the DICE model damages occurring within U.S. borders were approximated as 10 percent of the global estimate from the DICE model runs, based on the results from a regionalized version of the model (RICE 2010) reported in Table 2 of Nordhaus (2017). Although the regional shares reported in Nordhaus (2017) are specific to SC-CO₂, they were also used in approximating the share of marginal damages from CH₄ and N₂O emissions occurring within U.S. borders. Direct transfer of the U.S. share from the SC-CO₂ likely understate the U.S. share of the IWG global SC-CH₄ estimates based on DICE due to the combination of three factors: a) regional damage estimates are known to be highly correlated with output shares (Nordhaus 2017, 2014), b) the U.S. share of global output decreases over time in all five EMF-22 based socioeconomic scenarios used for the model runs, and c) the bulk of the temperature anomaly (and hence, resulting damages) from a perturbation in emissions in a given year will be experienced earlier for CH₄ than CO₂ due to the shorter lifetime of CH₄ relative to CO₂.

³³ For emissions occurring in 2020, the average estimates of marginal damages occurring within the U.S. borders for CO₂, CH₄, and N₂O emissions across all model runs that were used in 2017-2020 regulatory analyses were \$7/mtCO₂,

benefit from a consensus-based IWG process, were not documented in a dedicated TSD, subjected to a SC-GHG specific notice and comment period, or considered by National Academies in their 2017 review. The IWG will request public comments on the new information presented in this TSD, as well as other topics and issues the IWG will address as we develop the next set of updates (see Section 6).

4.1 Treatment of Uncertainty

Uncertainty about the value of the SC-GHGs is in part inherent, as with any analysis that looks into the future, but it is also driven by current data gaps associated with the complex physical, economic, and behavioral processes that link GHG emissions to human health and well-being. Some sources of uncertainty pertain to aspects of the natural world, such as quantifying the physical effects of greenhouse gas emissions on Earth systems. Other sources of uncertainty are associated with current and future human behavior and well-being, such as population and economic growth, GHG emissions, the translation of Earth system changes to economic damages, and the potential extent and costs of adaptation. It is important to note that even in the presence of uncertainty, scientific and economic analysis can provide valuable information to the public and decision makers. Such uncertainty should, however, be acknowledged, communicated as clearly as possible, and taken into account in the analysis whenever possible.

The 2016 TSD and the 2017 National Academies report provide detailed discussions of the ways in which the modeling underlying the development of the SC-GHG estimates addressed quantified sources of uncertainty.

In developing the SC-CO₂ estimates, the IWG considered various sources of uncertainty through a combination of a multi-model ensemble, probabilistic analysis, and scenario analysis. For example, the three IAMs used collectively span a wide range of Earth system and economic outcomes to help reflect the uncertainty in the literature and in the underlying dynamics being modeled. The use of an ensemble of three different models is also intended to, at least partially, address the fact that no single model includes all of the quantified economic damages. It also helps to reflect structural uncertainty across the models, which is uncertainty in the underlying relationships between GHG emissions, Earth systems, and economic damages that are included in the models. Bearing in mind the different limitations of each model (discussed in the 2010 TSD) and lacking an objective basis upon which to differentially weight the models, the three IAMs were given equal weight in the analysis.

The IWG used Monte Carlo techniques to run the IAMs a large number of times. In each simulation the uncertain parameters are represented by random draws from their defined probability distributions. In all three models the equilibrium climate sensitivity is treated probabilistically based on the probability distribution described in the 2010 TSD. The equilibrium climate sensitivity is a key parameter in this

\$190/mtCH₄, and \$2,300/mtN₂O (in 2020 dollars), respectively, using a 3 percent discount rate, and \$1/mtCO₂, \$59/mtCH₄, and \$380/mtN₂O (in 2020 dollars) using a 7 percent discount rate. These values increased over time; for 2050 emissions, the average estimates of marginal damages occurring within the U.S. borders are \$11/mtCO₂, \$380/mtCH₄, and \$4,000/mtN₂O (in 2020 dollars) using a 3% discount rate and \$3/mtCO₂, \$160/mtCH₄, and \$1,000/mtN₂O (in 2020 dollars) using a 7% discount rate. Using the same approach with a 2.5 percent discount rate, the average estimates of marginal damages occurring within the U.S. borders of CO₂, CH₄, and N₂O for emissions in 2020 are \$10/mtCO₂, \$240/mtCH₄, and \$3,300/mtN₂O (in 2020 dollars), respectively; for 2050 emissions, these values increase to \$15/mtCO₂, \$450/mtCH₄, and \$5,300/mtN₂O (in 2020 dollars).

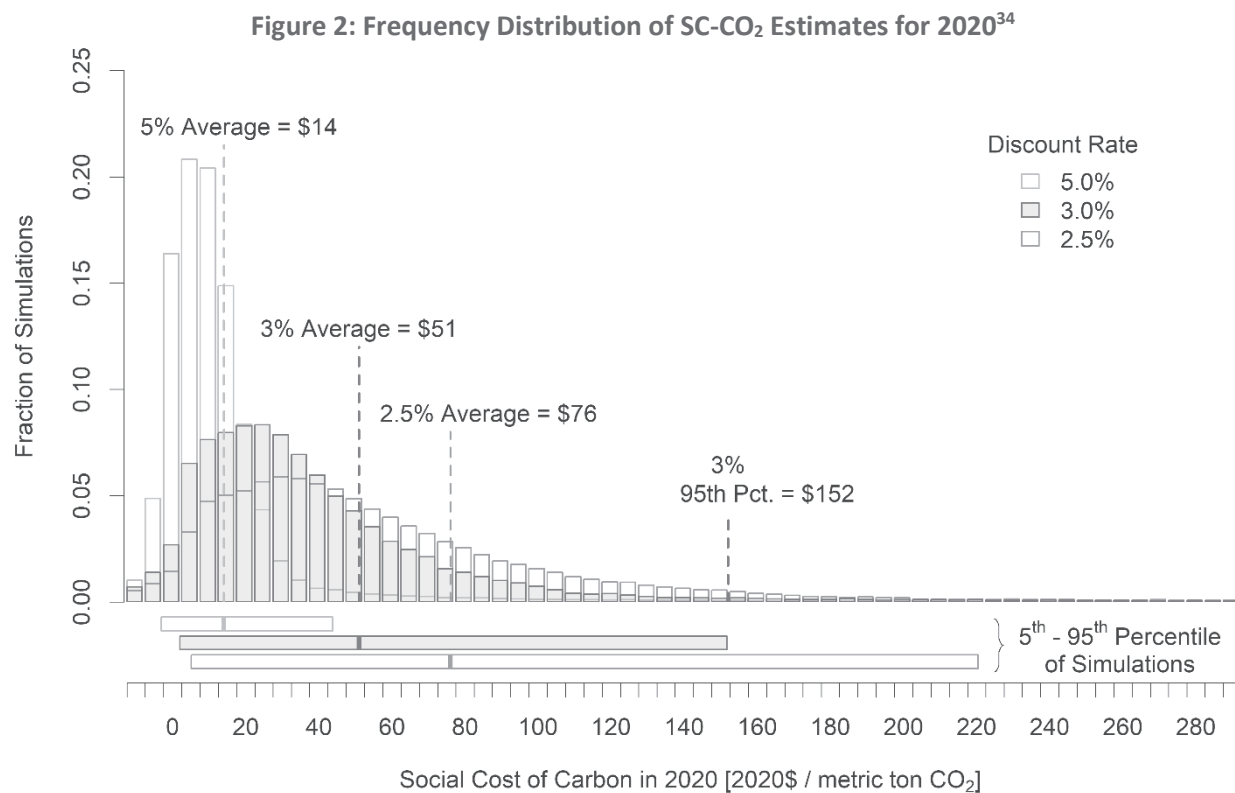
analysis because it helps define the strength of the climate response to increasing GHG concentrations in the atmosphere. In addition, the FUND and PAGE models define many of their parameters with probability distributions instead of point estimates. For these two models, the model developers' default probability distributions are maintained for all parameters other than those superseded by the IWG's harmonized inputs (i.e., equilibrium climate sensitivity, socioeconomic and emissions scenarios, and discount rates). More information on the uncertain parameters in PAGE and FUND is presented in Appendix C of the 2016 TSD (IWG 2016a).

Finally, based on the review of the literature, the IWG chose discount rates that reflect reasonable judgements under both prescriptive and descriptive approaches to intergenerational discounting. As discussed in the 2010 TSD, in light of disagreement in the literature on the appropriate discount rate to use in this context and uncertainty about how rates may change over time, the IWG selected three certainty-equivalent constant discount rates to span a plausible range: 2.5, 3, and 5 percent per year. However, unlike the approach taken for consolidating results across models and socioeconomic and emissions scenarios, the SC-GHG estimates are not pooled across different discount rates because the range of discount rates reflects both uncertainty and, at least in part, different policy or value judgements.

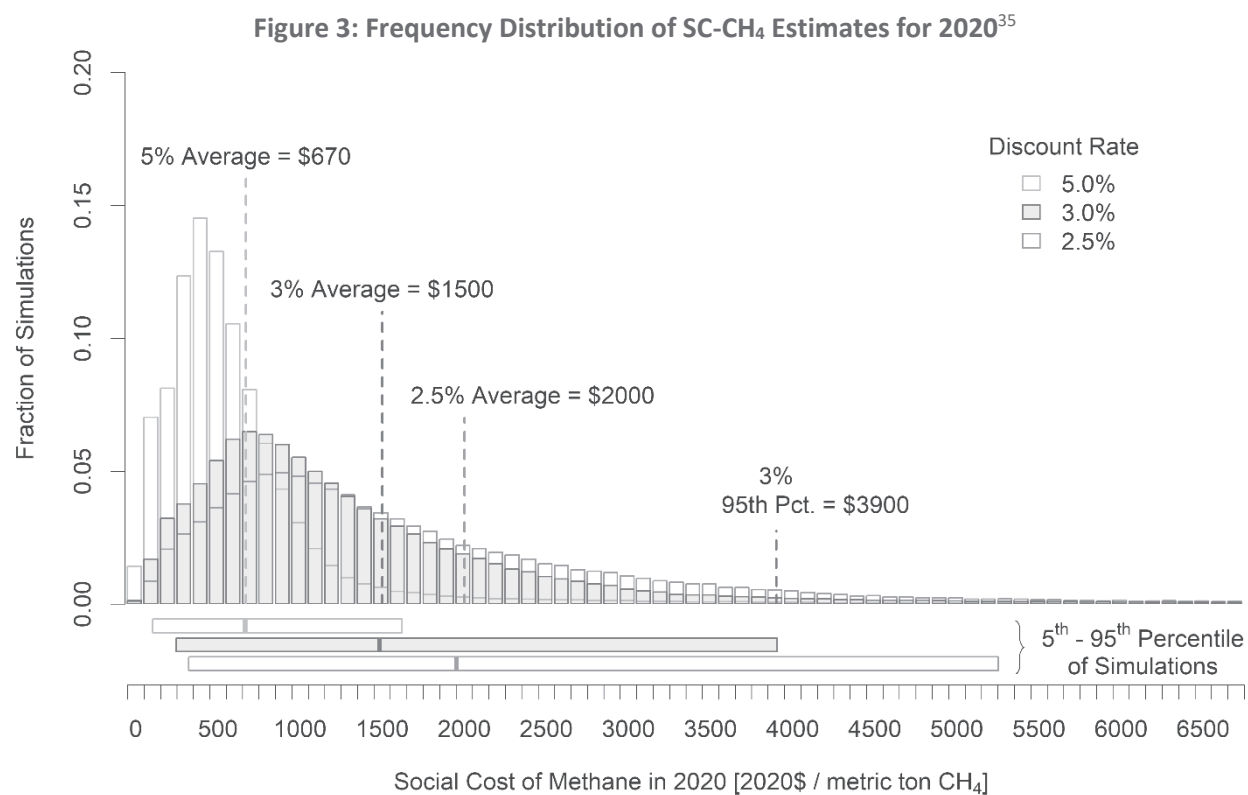
The outcome of accounting for various sources of uncertainty using the approaches described above is a frequency distribution of the SC-CO₂ estimates for emissions occurring in a given year for each of the three discount rates. These frequency distributions reflect the uncertainty around the input parameters for which probability distributions were defined, as well as from the multi-model ensemble and socioeconomic and emissions scenarios where probabilities were implied by the equal weighting assumption. It is important to note that the probability distribution for the SC-GHG calculated using the modeling approach outlined above does not fully characterize uncertainty about the SC-GHG due to impact categories omitted from the models and sources of uncertainty that have not been fully characterized due to data limitations. To name just one example of many known GHG-induced damages omitted in the three IAMs, none of the models include damages associated with ocean acidification, and, therefore, naturally the models do not reflect uncertainty as to the potential severity of those damages.

Figures Figure 2 through Figure 4 present the frequency distribution of the interim SC-CO₂, SC-CH₄, and SC-N₂O estimates, respectively, for emissions in 2020 and for each discount rate. Each distribution represents 150,000 estimates based on 10,000 simulations for each combination of the three models and five socioeconomic and emissions scenarios. In general, the distributions are skewed to the right and have long right tails, which tend to be longer for lower discount rates. To highlight the difference between the impact of the discount rate on the SC-GHG and other quantified sources of uncertainty, the bars below the frequency distributions provide a symmetric representation of quantified variability in the SC-GHG estimates conditioned on each discount rate. The full set of SC-GHG results through 2050 is available on OMB's website.

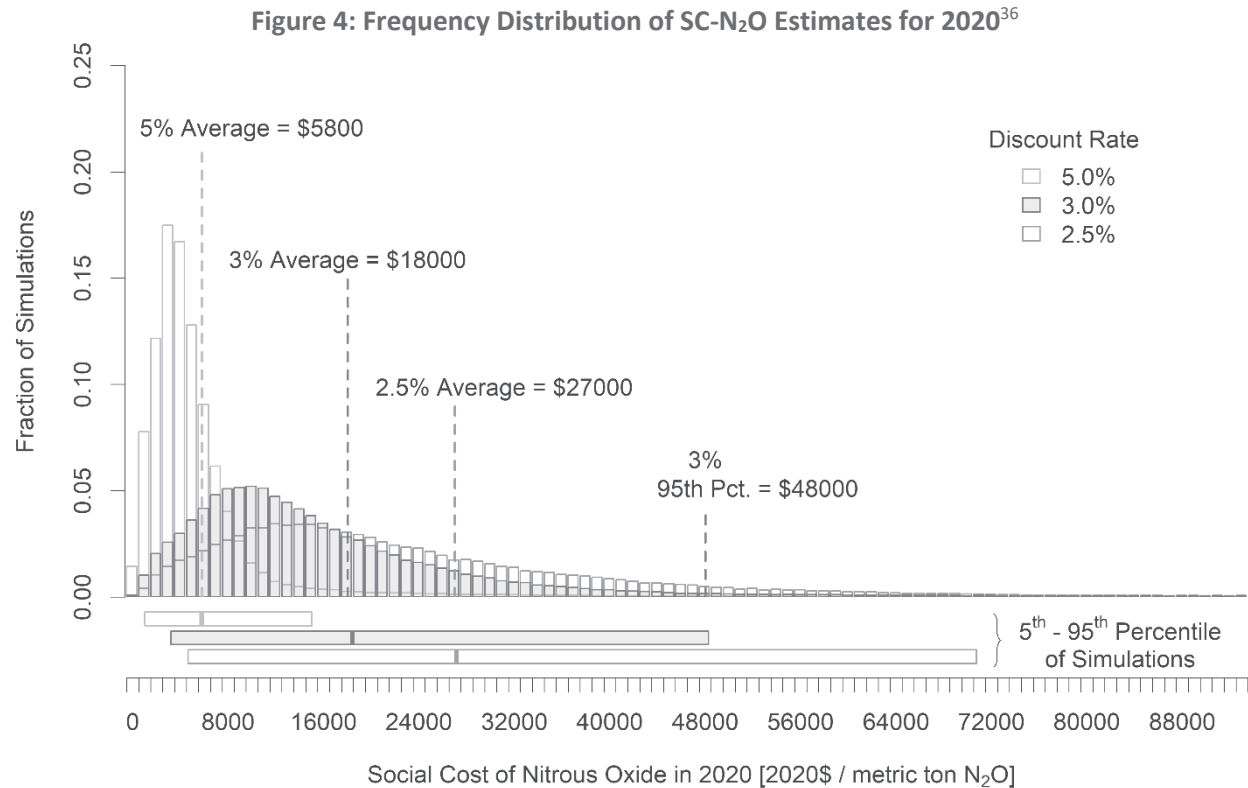
As illustrated by the frequency distributions in Figures Figure 2 through Figure 4, the assumed discount rate plays a critical role in the ultimate estimate of the SC-GHG. As explained in Section 3, this is because GHG emissions today continue to impact society far out into the future, so with a higher discount rate, costs that accrue to future generations are weighted less, resulting in a lower estimate. As discussed in Section 3.1, new data and evidence strongly suggest that the consumption interest rate is likely to be less than 3, near 2 percent or lower.



³⁴ Although the distributions and numbers in Figure 2 are based on the full set of model results (150,000 estimates for each discount rate), for display purposes the horizontal axis is truncated with 0.81 percent of the estimates falling below the lowest bin displayed and 3.56 percent of the estimates falling above the highest bin displayed.



³⁵ Although the distributions and numbers in Figure 3 are based on the full set of model results (150,000 estimates for each discount rate), for display purposes the horizontal axis is truncated with 0.12 percent of the estimates falling below the lowest bin displayed and 2.84 percent of the estimates falling above the highest bin displayed.



While the figures above reflect the uncertainties that are explicitly considered in a quantitative manner, there are other areas of uncertainty that are not quantitatively reflected in the interim SC-GHG estimates. The scientific and economics literature has further explored known sources of uncertainty related to estimates of the SC-GHG. For example, published studies explore the sensitivity of IAMs and the resulting SC-GHG estimates to different assumptions embedded in the models (see, e.g., Hope 2013, Anthoff and Tol 2013a, and Nordhaus 2014). However, there remain additional sources of uncertainty that have not been fully characterized and explored due to data limitations and lack of consensus in the scientific or economic literature about how to represent them. Additional research is needed to expand the quantification of various sources of uncertainty in estimates of the SC-GHG (e.g., developing explicit probability distributions for more inputs pertaining to climate impacts and their valuation).

4.2 Other Modeling Limitations

The interim SC-GHG estimates presented in this TSD have a number of limitations, as would be expected for any modeling exercise that covers such a broad scope of scientific and economic issues across the complex global landscape. These include the incomplete treatment of catastrophic and non-catastrophic impacts in the IAMs, their incomplete treatment of adaptation and technological change, the incomplete way in which inter-regional and intersectoral linkages are modeled, uncertainty in the extrapolation of

³⁶ Although the distributions and numbers in Figure 4 are based on the full set of model results (150,000 estimates for each discount rate), for display purposes the horizontal axis is truncated with 0.1 percent of the estimates falling below the lowest bin displayed and 2.85 percent of the estimates falling above the highest bin displayed.

damages to high temperatures, and inadequate representation of the relationship between the discount rate and uncertainty in economic growth over long time horizons.

There are newer versions available of each of the IAMs used to calculate the interim SC-GHG estimates in this TSD that offer improvements in some of these areas beyond the version of the models used for the interim estimates. For example, the latest version of the PAGE model, PAGE-ICE (Yumashev et al. 2019, Yumashev 2020), extends PAGE09 (Hope 2013) with representation of two nonlinear Arctic feedbacks (permafrost carbon feedback and surface albedo feedback) on the global climate system and economy, among other changes. The newest version of the DICE model, DICE2016-R3 (Nordhaus 2017), includes numerous updates, including changes to the carbon cycle (to better simulate the long-run behavior of larger models with full ocean chemistry) and updated methods for estimating economic activity.³⁷ At comparable discount rates, DICE2016-R3 would result in SC-CO₂ estimates roughly twice that of the interim estimates presented in this TSD. For example, using a 3% constant discount rate and other IWG modeling assumptions, DICE2016-R3 yields an average SC-CO₂ of \$104 (2018 international dollars) for 2020 emissions (Nordhaus 2019a). However, even DICE2016 and PAGE-ICE do not include all of the important physical, ecological, and economic impacts of climate change recognized in the climate change literature and the science underlying their damage functions lags behind the most recent research. Likewise, the socioeconomic and emissions scenarios used as inputs to the models in this TSD do not reflect new information from the last decade of scenario generation or the full range of projections.

The modeling limitations discussed above do not all work in the same direction in terms of their influence on the SC-GHG estimates. However, it is the IWG's judgment that, taken together, the limitations suggest that the interim SC-GHG estimates presented in this TSD likely underestimate the damages from GHG emissions. In particular, the IPCC's Fourth Assessment Report (IPCC 2007), which was the most current IPCC assessment available at the time when the IWG decision over the ECS input was made, concluded that SC-CO₂ estimates "very likely...underestimate the damage costs" due to omitted impacts. Since then, the peer-reviewed literature has continued to support this conclusion, as noted in the IPCC's Fifth Assessment report (IPCC 2014) and other recent scientific assessments (e.g., IPCC 2018, 2019a, 2019b; U.S. Global Change Research Program (USGCRP) 2016, 2018; and National Academies 2016b, 2019). These assessments confirm and strengthen the science, updating projections of future climate change and documenting and attributing ongoing changes. For example, sea level rise projections from the IPCC's Fourth Assessment report ranged from 18 to 59 centimeters by the 2090s relative to 1980-1999, while excluding any dynamic changes in ice sheets due to the limited understanding of those processes at the time (IPCC 2007). A decade later, the Fourth National Climate Assessment projected a substantially larger sea level rise of 30 to 130 centimeters by the end of the century relative to 2000, while not ruling out even more extreme outcomes (USGCRP 2018). Section 5 briefly previews some of the recent advances in the

³⁷ Relative to the previous version of DICE, DICE2013, the DICE2016 updates to the carbon cycle and the methods for estimating economic activity had the greatest impact on the SC-CO₂. Based on Archer et al. (2009), DICE2016's three-box carbon cycle model aims to better simulate the long-run behavior of larger models with full ocean chemistry. In measuring economic activity, one of the important changes in DICE2016 was to move from market exchange rates to measures adjusted for purchasing power parity when comparing monetary values across countries. See Nordhaus (2017, 2019a) for more discussion of these and other updates included in DICE2016-R3. Nordhaus has also recently explored side extensions of DICE2016. For example, DICE-GIS extends DICE2016 to include representation of sea level rise from melting of the Greenland Ice Sheet (Nordhaus 2019b, Pizer 2019).

scientific and economic literature that the IWG is actively following and that could provide guidance on, or methodologies for, addressing some of the limitations with the interim SC-GHG estimates.

5 Scientific and Economic Advances

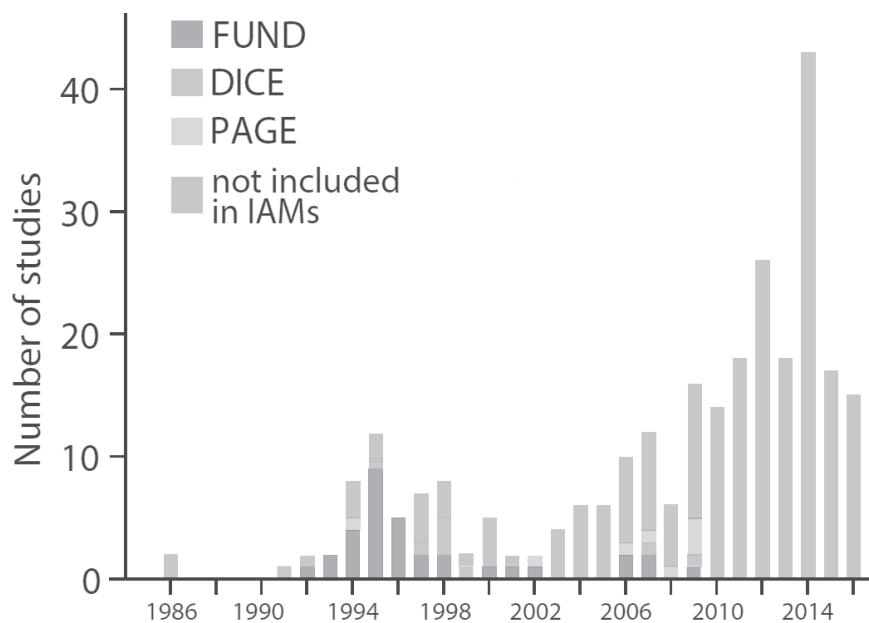
The research community has made considerable progress in developing new data and methods that will provide a path forward for bringing the USG SC-GHG estimates closer to the current frontier of climate science and economics and could address many of the National Academies' (2017) recommendations. This research since 2010/2013 has advanced knowledge regarding each key component in the process of estimating the SC-GHG. This TSD does not intend to provide a detailed review of all these advancements, but this section does highlight some of the key research and new information that the IWG will be reviewing as it works to improve the SC-GHG estimates. As part of the process for updating the SC-GHG estimates by January 2022, the IWG will survey the scientific literature, including the economic literature, to identify advances to address the National Academies (2017) recommendations.

Climate system representation. There have been advancements in climate science since the publication of the IPCC's Fourth Assessment Synthesis report (IPCC 2007), which was the basis for the IWG decision on what equilibrium climate sensitivity (ECS) input to use in the IAM model runs. The conclusions of recent scientific assessments, e.g., from the IPCC (2014, 2018, 2019a, 2019b), the USGCRP (2016, 2018), and the National Academies (2016b, 2019), confirm and strengthen the science, updating projections of future climate change and documenting and attributing ongoing changes. In addition, there are reduced complexity climate models that could offer meaningful improvement over current representation of climate dynamics in existing IAMs (Nicholls et al. 2020). For example, the National Academies (2017) stated that the FAIR model (Smith et al., 2018) satisfies all of the criteria set by National Academies (2017) recommendations related to the representation of climate system dynamics, generates projections of future warming consistent with more complex, state of the art models, can be used to accurately characterize current best understanding of uncertainty, and can be easily implemented and transparently documented. Reduced complexity sea level rise models are also being developed that can provide projections for damage functions that require sea level estimates, including the contributions of thermal expansion and glacial and ice sheet melting based on recent scientific research (e.g., Wong et al. 2017).

Damage functions. At the core of IAMs are "damage functions" that map global mean temperature changes and other physical impacts of climate change into economic (both market³⁸ and nonmarket³⁹) damages. Relative to how much progress has been made in modeling and improving our understanding of climate system dynamics and the physical impacts resulting from temperature change, efforts involved in, and the public resources targeted at, understanding how these physical changes translate into economic impacts have been significantly smaller (Auffhammer 2018). Even so, as illustrated in Figure 5, in the time since the versions of the IAMs used in this TSD were published, there has been an explosion of research on climate impacts and damages.

³⁸ Examples of market damages include changes in net agricultural productivity, energy use, and property damage from increased flood risk.

³⁹ Examples of nonmarket damages include services that natural ecosystems provide to society.

Figure 5. New Research on Climate Impacts⁴⁰

Source: Greenstone (2016).

Several efforts are underway to draw on recent literature for improving damage functions and to generate new damage estimates. In particular, the Climate Impact Lab is undertaking an effort to quantify and monetize damages at a fine spatial scale, relying on rigorous empirical methods to develop plausibly causal estimates for several sectors, including health (Carleton et al. 2020), energy (Rode et al. 2021), labor productivity (Rode et al. 2020), agriculture, conflict, and sea level rise.⁴¹ Other research efforts have sought to update the damage function for one sector in an existing IAM based on an updated review of the empirical literature on climate impacts pertaining to that sector (e.g., Moore et al. (2017) for agriculture damages in the FUND model). Damage functions specific to impacts within the U.S. have also been developed and improved for a number of sectors, such as impacts on coastal property, mortality due to extreme temperatures, transportation infrastructure, electricity supply and demand, water quality, recreation, and allergies (Neumann et al. 2020) and impacts of climate change on air quality and human health (Fann et al. 2021). There is also an emerging literature focused on incorporating interactions among

⁴⁰ In many cases, the three IAMs used different studies for calibration. This is particularly true of FUND, which used studies relating to different subsectors of the model, whereas DICE and PAGE did not have as detailed a sectoral breakdown. That means that summing across these different models is likely valid in all but a few isolated cases. The blue bars include studies uncovered from a comprehensive literature review in the economics literature (and a few others in public health or relevant disciplines) by the Climate Impact Lab (CIL) through early 2016. Each of the studies counted in blue was determined by CIL to have employed a research design that allowed for the causal interpretation of results (Greenstone 2016).

⁴¹ The Climate Impact Lab is a multidisciplinary collaboration of climate scientists, economists, computational experts, researchers, analysts, and students working to build empirically derived, local-level estimates of climate change damages and an empirically based SC-CO₂. More information on the Climate Impact Lab can be found at: <http://www.impactlab.org/>.

regions and impacts. For example, biodiversity loss (e.g., animal pollinators) as a result of climate-driven ecosystem stress could amplify impacts of climate change on agriculture. See National Academies (2017) for more discussion of recent research addressing these and other types of interactions.

Related to the development of damage functions, damages from climate change are uncertain and hence pose additional risks. Reductions in GHG emissions reduce not only expected damages, but also reduce the uncertainty and risks of catastrophic events. Evaluating the damages using the mean outcome does not account for the benefits of reducing uncertainty. Some researchers have raised the need to include this consideration in the SC-GHG (e.g., Carleton and Greenstone 2021) consistent with the observation that individuals are regularly willing to pay for insurance against bad outcomes.

Furthermore, E.O. 13990 instructs the IWG to consider how best to reflect environmental justice and intergenerational equity concerns in assessing climate damages. In the context of climate policy, equity considerations are discussed by economists, ethicists, and others in several ways: distributional effects within a specific country, effects across countries, and intergenerational equity impacts. Economists, ethicists, and others have proposed potential ways to incorporate equity into the SC-GHG. For example, IAM developers have introduced the use of equity weights potentially incorporate these concerns (e.g., Hope 2008; Anthoff and Emmerling 2019).

Socioeconomic and Emissions Projections. The socioeconomic and emissions projections underlying current USG SC-GHG estimates were developed around 2007. Since that time, there have been efforts to develop updated baseline scenarios. Several researchers have started using deterministic scenarios available as part of the IPCC's Fifth Assessment Report Working Group 3 database and the Shared Socioeconomic Pathways (SSPs) linked with the Representative Concentration Pathway (RCP) emissions scenarios (Riahi et al. 2017 and Moss et al. 2010) as benchmark scenarios. Resources for the Future (RFF) has engaged in a research effort to implement each of the National Academies' (2017) recommendations, in collaboration with research partners.⁴² One part of this effort is focused on developing probability distributions for future paths of population, GDP, and emissions via using econometrics and expert elicitation techniques. For example, economic growth projections are being built off the results of a formal expert elicitation of leading growth economists together with recent research by Muller, Stock and Watson (2020), who have refined a foundational statistical methodology for generating long-run projections of economic growth at the country level. RFF plans to make these probabilistic scenarios easily usable on Mimi.jl, an open-source modular computing platform used for creating, running, and performing analyses on IAMs.⁴³

Discounting. Another area of active research relates to discounting, including the best available evidence on the consumption rate of interest and the application of discount rates to regulations in which some costs and benefits accrue intra-generationally while others accrue inter-generationally. As described in Section 3.2, new empirical evidence suggests that consumption interest rates are now below the previous estimate of 3 percent presented in OMB's Circular A-4. This empirical evidence is also consistent with long-term forecasts by the Congressional Budget Office, suggesting these lower rates will persist (U.S. CBO

⁴² For more information on RFF's Social Cost of Carbon Initiative, see: <https://www.rff.org/topics/scc/>.

⁴³ Mimi.jl was developed by a team of researchers at UC Berkeley led by David Anthoff in response to a core recommendation from the National Academies (2017) to create an integrated modular approach to draw more readily on expertise from the wide range of scientific disciplines relevant to SC-CO₂ estimation. Mimi.jl provides an interface for defining components and building models in a modularized, transparent way (mimiframework.org).

2020). Future updates to the SC-GHG estimates will need to reflect the best available evidence from the time series of risk-free rate data and expectations of these rates into the future.

As described in Section 3.3 uncertainty in the discount rate over time yields a declining certainty-equivalent discount rate schedule and can have a dramatic effect on the size of the SC-GHG. While this is not a new theoretical result, new literature has proposed methods for how to incorporate discount rate uncertainty (e.g., Arrow et al., 2013; Cropper et al., 2014) and other nations have implemented declining discount rate schedules for policy analysis (e.g., United Kingdom, France, and Germany). Recent recommendations by the National Academies (2017) and EPA's Science Advisory Board (2021) have encouraged the development and use of a declining certainty-equivalent discount rate schedule as theoretically appropriate and as a method of introducing consistency into analyses that have both near-term and long-term impacts.

In light of new science and evidence, including many of those highlighted in the paragraphs above, other jurisdictions are already considering or have implemented some of the scientific and economic advances discussed above. For example, some states that use SC-GHG estimates in policy analysis have recently updated their approach to discounting based on the increasing evidence that a 3% discount rate is too high for intergenerational analysis. In December 2020, New York issued guidance recommending state agencies use SC-GHG estimates based the same IWG modeling and input decisions as presented in this TSD but with lower discount rates: 2 percent in central scenarios (\$125/mtCO₂ for 2020 emissions (2020 dollars), along with sensitivity analysis at 1 percent and 3 percent (New York Department of Environmental Conservation 2020). Similarly, in Washington state an April 2019 law required utilities to use estimates based on the IWG methodology with a 2.5% discount rate when developing "lowest-cost analyses" for its integrated resource planning and clean energy plans.⁴⁴

Canada is also in the process of updating the SC-GHG estimates used in their regulatory analyses. While the update is underway, they are continuing to use the estimates they adopted in 2016 (which are an adaptation of the IWG global SC-GHG estimates presented in this TSD) as well as a side analysis based on more recent estimates from the academic literature. Based on their review of the literature and latest climatological and economic evidence, they present their current estimates as a "likely underestimate [of] climate-related damages to society" and the side analysis as a way "to illustrate a range of plausible values if the Department were to update its [social cost of carbon] estimate based on new versions of the models currently used."⁴⁵ Specifically, the side analysis includes SC-CO₂ estimates based on DICE2016 and PAGE-ICE (\$135 and \$440/mtCO₂ for 2020 emissions (2019 Canadian dollars)).⁴⁶

The IWG will consider the new science and evidence as it works towards a more comprehensive update, including the new research and information described in this section.

⁴⁴ Wash. Sen. Bill. 5116 (signed by Gov. Inslee on May 7, 2019). More information on Washington and other states' use of SC-GHG estimates is compiled by the Institute for Policy Integrity at NYU School of Law (see <http://www.costofcarbon.org/states>) and discussed in U.S. GAO (2020).

⁴⁵ Proposed Clean Fuel Regulations (published for public comment on 12/20/20) <http://www.gazette.gc.ca/rp-pr/p1/2020/2020-12-19/pdf/g1-15451.pdf>.

⁴⁶ Proposed Clean Fuel Regulations (published for public comment on 12/20/20) <http://www.gazette.gc.ca/rp-pr/p1/2020/2020-12-19/pdf/g1-15451.pdf>.

6 Path Forward

E.O. 13990 reaffirms that “[a]n accurate social cost is essential for agencies to accurately determine the social benefits of reducing greenhouse gas emissions when conducting cost-benefit analyses of regulatory and other actions” (E.O. 13990 2021). The E.O. instructs the IWG to publish interim SC-CO₂, SC-CH₄, and SC-N₂O estimates (collectively, SC-GHG estimates) within 30 days and to publish a set of final estimates by no later than January 2022.⁴⁷ In doing so, the E.O. instructs the IWG to consider the recommendations of the National Academies of Science, Engineering, and Medicine as reported in *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide* (2017) and other pertinent scientific literature; solicit public comment; engage with the public and stakeholders; seek the advice of ethics experts; and ensure that the SC-GHG estimates reflect the interests of future generations in avoiding threats posed by climate change.

In developing the SC-GHG estimates in 2010, 2013, and 2016 the IWG used consensus-based decision making, relied on peer-reviewed literature and models, and took steps to disclose limitations and incorporate new information by considering public comments and revising the estimates as updated research became available (U.S. GAO 2014). Going forward the IWG commits to maintaining a consensus driven process for making evidence-based decisions that are guided by the best available science and input from the public, stakeholders, and peer reviewers.

While the IWG assesses the current state of the science in each component of the SC-GHG modeling exercise, the IWG is beginning by asking for public comment on how best to incorporate the latest, peer reviewed science to develop an updated set of SC-GHG estimates. The IWG will soon issue a Federal Register notice with a detailed set of requests for public comments on the new information presented in this TSD, as well as other topics and issues the IWG will address as we develop the next set of updates. Among other things, the IWG will ask for public comment on how to incorporate the best available science in the updated SC-GHG estimates, due to be published by January 2022, and how to incorporate the recommendations of the National Academies (2017).

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⁴⁷ The Executive Order also requests that the IWG assess the application of the SC-GHG to inform government decision making beyond regulations, in addition to recommending a robust long-term structure for ensuring the SC-GHGs continue to reflect the best available science and economic and that long-term research needs are met.

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Appendix – Annual SC-CO₂, SC-CH₄, and SC-N₂O Values, 2020-2050

The values in Tables A-1 through A-3 are the same as those reported in the 2016 TSD and Addendum adjusted for inflation to 2020 dollars using the annual GDP Implicit Price Deflator values in U.S. Bureau of Economic Analysis (BEA) NIPA Table 1.1.9: $113.626 (2020) / 92.486 (2007) = 1.228575$ (U.S. BEA 2021). Values of SC-CO₂ presented in this TSD are rounded to the nearest dollar; SC-CH₄ and SC-N₂O are rounded to two significant figures. The annual unrounded estimates are available on OMB's website for use in regulatory and other analyses: <https://www.whitehouse.gov/omb/information-regulatory-affairs/regulatory-matters/#scghgs>.

Table A-1: Annual SC-CO₂, 2020 – 2050 (in 2020 dollars per metric ton of CO₂)

Emissions Year	Discount Rate and Statistic			
	5% Average	3% Average	2.5% Average	3% 95 th Percentile
2020	14	51	76	152
2021	15	52	78	155
2022	15	53	79	159
2023	16	54	80	162
2024	16	55	82	166
2025	17	56	83	169
2026	17	57	84	173
2027	18	59	86	176
2028	18	60	87	180
2029	19	61	88	183
2030	19	62	89	187
2031	20	63	91	191
2032	21	64	92	194
2033	21	65	94	198
2034	22	66	95	202
2035	22	67	96	206
2036	23	69	98	210
2037	23	70	99	213
2038	24	71	100	217
2039	25	72	102	221
2040	25	73	103	225
2041	26	74	104	228
2042	26	75	106	232
2043	27	77	107	235
2044	28	78	108	239
2045	28	79	110	242
2046	29	80	111	246
2047	30	81	112	249
2048	30	82	114	253
2049	31	84	115	256
2050	32	85	116	260

Table A-2: Annual SC-CH₄, 2020 – 2050 (in 2020 dollars per metric ton of CH₄)

Emissions Year	Discount Rate and Statistic			
	5% Average	3% Average	2.5% Average	3% 95 th Percentile
2020	670	1500	2000	3900
2021	690	1500	2000	4000
2022	720	1600	2100	4200
2023	750	1600	2100	4300
2024	770	1700	2200	4400
2025	800	1700	2200	4500
2026	830	1800	2300	4700
2027	860	1800	2300	4800
2028	880	1900	2400	4900
2029	910	1900	2500	5100
2030	940	2000	2500	5200
2031	970	2000	2600	5300
2032	1000	2100	2600	5500
2033	1000	2100	2700	5700
2034	1100	2200	2800	5800
2035	1100	2200	2800	6000
2036	1100	2300	2900	6100
2037	1200	2300	3000	6300
2038	1200	2400	3000	6400
2039	1200	2500	3100	6600
2040	1300	2500	3100	6700
2041	1300	2600	3200	6900
2042	1400	2600	3300	7000
2043	1400	2700	3300	7200
2044	1400	2700	3400	7300
2045	1500	2800	3500	7500
2046	1500	2800	3500	7600
2047	1500	2900	3600	7700
2048	1600	3000	3700	7900
2049	1600	3000	3700	8000
2050	1700	3100	3800	8200

Table A-3: Annual SC-N₂O, 2020 – 2050 (in 2020 dollars per metric ton of N₂O)

Emissions Year	Discount Rate and Statistic			
	5% Average	3% Average	2.5% Average	3% 95 th Percentile
2020	5800	18000	27000	48000
2021	6000	19000	28000	49000
2022	6200	19000	28000	51000
2023	6400	20000	29000	52000
2024	6600	20000	29000	53000
2025	6800	21000	30000	54000
2026	7000	21000	30000	56000
2027	7200	21000	31000	57000
2028	7400	22000	32000	58000
2029	7600	22000	32000	59000
2030	7800	23000	33000	60000
2031	8000	23000	33000	62000
2032	8300	24000	34000	63000
2033	8500	24000	35000	64000
2034	8800	25000	35000	66000
2035	9000	25000	36000	67000
2036	9300	26000	36000	68000
2037	9500	26000	37000	70000
2038	9800	27000	38000	71000
2039	10000	27000	38000	73000
2040	10000	28000	39000	74000
2041	11000	28000	39000	75000
2042	11000	29000	40000	77000
2043	11000	29000	41000	78000
2044	11000	30000	41000	80000
2045	12000	30000	42000	81000
2046	12000	31000	43000	82000
2047	12000	31000	43000	84000
2048	13000	32000	44000	85000
2049	13000	32000	45000	87000
2050	13000	33000	45000	88000

Exhibit E

Social Cost of Greenhouse Gas Emissions: Frequently Asked Questions (FAQs)

[6/3/21]

With this document, the Office of Information and Regulatory Affairs (OIRA) is providing answers to frequently asked questions about the use of the interim estimates of the social cost of greenhouse gas emissions, which were issued in February 2021 pursuant to Executive Order 13990 (E.O. 13990) in the *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide: Interim Estimates under Executive Order 13990* (herein called the “2021 interim estimates of the social cost of greenhouse gas emissions” or “2021 interim estimates”).

On January 21, 2021, President Biden signed E.O. 13990, which established an Interagency Working Group on the Social Cost of Greenhouse Gases (IWG) and directed the IWG, as appropriate and consistent with applicable law, to publish interim estimates of the social cost of carbon, nitrous oxide, and methane “which agencies shall use when monetizing the value of changes in greenhouse gas emissions resulting from regulations and other relevant agency actions until final values are published.”

Executive Order 12866 (E.O. 12866) states as a general principle that “[e]ach agency shall assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.” In addition, it provides that agencies must submit a regulatory impact analysis for those regulatory actions that are “significant” within the meaning of section 3(f)(1) of E.O. 12866—or what OMB Circular A-4 (Circular A-4) describes as “economically significant.” For regulatory actions that are otherwise deemed significant under the other provisions of section 3(f) of E.O. 12866, E.O. 12866 requires that agencies provide OIRA with “[a]n assessment of the potential costs and benefits of the regulatory action.” As Circular A-4 explains, such agency assessments “should monetize quantitative estimates whenever possible” while also noting that assessments “should carry out a careful evaluation of non-quantified benefits and costs.”

The purpose of this document is to offer answers to questions often asked with respect to the 2021 interim estimates of the social cost of greenhouse gas emissions; nothing said here is meant to alter existing requirements in any way. For more complete guidance, please consult E.O. 13990, E.O. 12866, and Circular A-4.

1. How should agencies use the 2021 interim estimates of the social cost of greenhouse gas emissions in the context of benefit-cost analysis conducted pursuant to E.O. 12866?

Pursuant to E.O. 13990, when agencies prepare an assessment of the potential costs and benefits of regulatory action for purposes of compliance with E.O. 12866, they must use the 2021 interim estimates in monetizing increases or decreases in greenhouse gas emissions that result from regulations and other agency actions until updated values are released by the IWG. Agencies should follow this requirement as they follow other requirements for preparing E.O. 12866 benefit-cost analysis. For example, when an agency’s E.O. 12866 benefit-cost analysis uses the 2021 interim estimates and the agency receives comments through the notice-and-comment process that relate to the agency’s use of the 2021 interim estimates, the agency should respond

to those comments in order to satisfy the requirement in E.O. 12866 that the regulatory process be accessible and open to the public.

2. How should agencies use the 2021 interim estimates of the social cost of greenhouse gas emissions in the context of analysis conducted pursuant to specific statutory authorities?

Directives issued in executive orders and OIRA guidance are always made subject to applicable law. Occasionally, for example, an applicable statute expressly specifies and requires or excludes an analytic approach, such as benefit-cost analysis, in deriving a standard. When an agency conducts benefit-cost analysis pursuant to specific statutory authorities, those authorities must control the agency's development and use of the analysis in taking an agency action.¹

In addition, there are circumstances where the applicable statutory authorities do not dictate a specific approach to benefit-cost analysis, and the agency incorporates and relies upon a benefit-cost analysis in deciding to take a regulatory action. In those circumstances, and where required by principles of administrative law, the agency must make its benefit-cost analysis (including any use of the 2021 interim estimates and methodological choices made with respect to the 2021 interim estimates, as well the agency's rationale for those choices) available for public notice and comment.

Because the 2021 interim estimates are based on models and inputs that have been used in peer reviewed publications, are endorsed by the interagency experts on the IWG, and are supported by a methodology that has been subject to public comment and consideration by the National Academies Sciences, Engineering, and Medicine, those estimates will often provide the best available method for monetizing the value of increases or decreases in greenhouse gas emissions resulting from or related to federal agency actions. Nevertheless, when applicable statutes require another approach, those statutory requirements must dictate whether and how the agency monetizes changes in greenhouse gas emissions in the context of the agency action.² And in other circumstances where an agency will take final action in reliance on a benefit-cost analysis that includes estimates of the social cost of greenhouse gas emissions, the agency must respond to any significant comments on those estimates and ensure its analysis (including any use of the 2021 interim estimates) is justified as not arbitrary or capricious, as required by principles of administrative law.

¹ In these circumstances, the agency's additional E.O. 12866 and/or Circular A-4 analyses provide the public with transparency on the impacts, including the costs and benefits, of the agency action, even though those additional analyses might not be used to justify the agency's action, depending on the requirements of any applicable statutes. For analyses pursuant to E.O. 12866, agencies must use the 2021 interim estimates of the social cost of greenhouse gas emissions, as explained in Answer #1.

² Again, as explained in footnote 1, in such circumstances, any additional E.O. 12866 and/or Circular A-4 analyses must continue to use the 2021 interim estimates of the social cost of greenhouse gas emissions, even if those additional analyses might not be used to justify the agency's action.

In sum, agencies must be governed by any relevant statutory authorities when they decide whether and how to monetize the impacts of their actions in the context of proposing and justifying a regulatory action, including monetizing a change in greenhouse gas emissions that will result from the action.

Exhibit F

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF LOUISIANA
LAKE CHARLES DIVISION

THE STATE OF LOUISIANA, *et al.*,

Plaintiffs,

v.

JOSEPH R. BIDEN, JR., in his official
capacity as President of the United
States, *et al.*,

Defendants.

Case No. 2:21-cv-01074-JDC-KK

**DECLARATION OF DOMINIC J. MANCINI SUBMITTED IN
SUPPORT OF DEFENDANTS' MOTION FOR A STAY PENDING APPEAL**

Pursuant to 28 U.S.C. § 1746, I, Dominic J. Mancini, declare the following to be true and correct:

1. I am the Deputy Administrator of the Office of Information and Regulatory Affairs (OIRA) of the Office of Management and Budget (OMB), which is an office within the Executive Office of the President. I have held the position of Deputy Administrator since 2013. As part of my duties, in the absence of a confirmed Administrator of OIRA, I have often been delegated the duties of the Administrator, and I am currently serving in the capacity. In addition, I have held various positions with OIRA, including serving as Branch Chief for natural resources and the environment, and as the Economist for health, transportation, and general government. Prior to joining OIRA, I worked as an economist at the Food and Drug

Administration, preparing regulatory impact analyses for economically significant regulations. I have degrees in economics and finance from the University of Florida, and a PhD in economics from the University of North Carolina at Chapel Hill.

2. I understand that, in the above-captioned case, the Court has entered a Preliminary Injunction that, among other things, prohibits federal agencies “from adopting, employing, treating as binding, or relying upon” the work product of the Interagency Working Group on the Social Cost of Greenhouse Gases (the “Working Group” or “IWG”), and any estimates of the social cost of greenhouse gases that are based on “global effects” or that “do[] not utilize discount rates of 3 and 7 percent.” I submit this declaration in support of the Defendants’ motion for a stay pending appeal in the above-captioned case. I make the statements herein based upon my personal knowledge and information made available to me in my official capacity.

BACKGROUND

3. The Office of Information and Regulatory Affairs (“OIRA”) is a statutory part of the Office of Management and Budget (“OMB”) within the Executive Office of the President. OIRA is the Federal Government’s central authority for, among other things, the review of Executive Branch regulations.

4. Executive Order (“EO”) 12866, issued on September 30, 1993, assigned OIRA the responsibility of coordinating interagency Executive Branch review of significant regulations before publication. This ensures agency compliance with the principles in EO 12866, which include providing meaningful public comment opportunities, considering alternatives to the rulemaking, and assessing both costs and benefits.

OIRA review helps to ensure that agencies disclose and carefully consider the consequences of rules, including both benefits and costs, before they proceed.

5. Specifically, EO 12866 established a detailed regulatory-review process to be coordinated by OMB and OIRA in which all agencies, except “independent regulatory agencies,” must participate. EO 12866 § 3(b). For significant regulatory actions, EO 12866 requires an assessment of the anticipated costs and benefits of the agency’s proposal. *See id.* § 6(a)(3)(B), (C). The Executive Order directs an agency to provide OIRA with a written explanation of why it opted for the proposed action and how it best meets the need for the action. *See id.* § 6(a)(3)(B)(i)–(ii), (C)(iii). OIRA then reviews the agency’s action. *See id.* § 6(b)(2). If an agency proposes or finalizes a significant rule that requires a more-detailed analysis of costs and benefits, one product of this process, often called a Regulatory Impact Analysis (“RIA”), is published alongside it. *See id.* § 6(a)(3)(E).

6. Such regulatory analysis provides a formal means of organizing the evidence on the key effects—both good and bad—of the various alternatives that should be considered in developing regulations. Among the purposes are (1) to learn if the quantitative and qualitative benefits of an action are likely to justify the costs; (2) to promote accountability to the public; and (3) to discover which of various possible alternatives would produce the highest net benefits, both in a formal, quantitative manner, as well as when taking qualitative effects into account. Sometimes careful analysis can show that a less stringent alternative is best; sometimes more stringency will be shown to be justified; sometimes a creative option will emerge.

CIRCULAR A-4

7. OMB guidance, in particular Circular A-4, “is designed to assist analysts in the regulatory agencies by defining good regulatory analysis” when developing RIAs that comply with EO 12866. Office of Mgmt. & Budget, *Circular A-4*, at 1 (2003). Among other things, Circular A-4 emphasizes that agencies “should monetize quantitative estimates whenever possible.” *Id.* at 27. Furthermore, as Circular A-4 explains, a good cost-benefit analysis will monetize more than just direct effects: Agencies should include “any important ancillary benefits and countervailing risks.” *Id.* at 26. In addition, and importantly, Circular A-4 emphasizes that agencies “cannot conduct a good regulatory analysis according to a formula. Conducting high-quality analysis requires competent professional judgment. Different regulations may call for different emphases in the analysis, depending on the nature and complexity of the regulatory issues and the sensitivity of the benefit and cost estimates to the key assumptions.” *Id.* At 3.

8. In circumstances where estimated costs and benefits of regulations may accrue well into the future, Circular A-4 describes how agencies should adjust the estimated impacts, taking into account these longer time horizons for future effects—namely, by choosing appropriate discount rates (including those that account for “intergenerational effects”)¹ and selecting an end point “far enough in the future to encompass all the significant benefits and costs likely to result from the rule.” *Id.* at 31–32.

¹ A discount rate is an interest rate used to convert future monetary sums into present-value equivalents. See OMB, *Circular A-4*, at 31–32.

9. Circular A-4 specifically recommends that agencies provide estimates of costs and benefits using both a 3% and 7% discount rate.² Though Circular A-4 recommends agencies consider a consumption-based discount rate of 3% and a capital-based discount rate of 7% as “default . . . approximation[s],” Circular A-4 first explains that the “analytically preferred method” for discounting “is to adjust all the benefits and costs to reflect their value in equivalent units of consumption and to discount them at the rate consumers and savers would normally use.” *Id.* at 33. Since 2010, the Interagency Working Group has noted that its estimates of climate damages are in “consumption-equivalent units” and that a “consumption rate of interest,” like 3%, “is the correct discounting concept to use when future damages from elevated temperatures are estimated in consumption-equivalent units.” IWG, *Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis* 23 (2010). In other words, the “analytically preferred method” for discounting the social cost of greenhouse gases, where the integrated assessment models used in the calculation express their results in consumption units, is to focus on consumption-based rates and *not* to use the capital-based 7% rate.

10. This is especially true for rules with intergenerational effects, for which Circular A-4 recommends agencies consider further sensitivity analysis assessing

² A consumption-based rate reflects the value at which society trades off present for future consumption, and is thought to be most appropriate when regulations primarily and directly affect private consumption, such as through higher consumer prices for goods and services. The rate of return on long-term government debt is often used as an approximation for the social rate of time preference and the consumption-based discount rate. A capital-based rate reflects the opportunity cost of capital and is thought to be most appropriate if regulatory requirements crowd out private investment opportunities and potential future returns on such investments. An average before-tax rate of return to private capital in U.S. markets is often used as an approximation. *Circular A-4* at 33.

impacts “using lower but positive discount rate[s].” *Circular A-4*, at 36. Specifically, Circular A-4 discusses the many reasons why it may be appropriate for analyses to include the presentation of long-term impacts using lower discount rates, and also explicitly discusses the circumstances in which rates at or lower than 3% could be appropriate for RIAs. These include, as discussed in the Circular, ethical considerations for intergenerational analysis and the impact of discount-rate uncertainty across time that could lead to an emphasis on lower or declining rates. *Id.* at 35-36. While not discussed directly with respect to discount rates, A-4 also points out that the “uncertain knowledge of how some economic activities might affect future climate change” is a likely source of such longer-term uncertainty. *Id.* at 38. In short, for the many reasons cited in Circular A-4, RIAs that include analyses using discount rates of lower than 3% may be appropriate.

11. Circular A-4 also provides guidance to agencies on how to determine the proper scope of analysis for a given regulatory action. The default recommendation is for agencies first to “focus on benefits and costs that accrue to citizens and residents of the United States.” *Id.* at 15. Circular A-4 also gives agencies the discretion to evaluate the global impacts of regulation, however, stating that “[w]here you choose to evaluate a regulation that is likely to have effects beyond the borders of the United States, these effects should be reported separately.” *Id.* at 15. In addition, in the section in Circular A-4 calling for analysis showing that Federal regulation is appropriate, it states that “the role of Federal regulation in facilitating U.S. participation in global markets should also be considered. Harmonization of U.S. and

international rules may require a strong Federal regulatory role. Concerns that new U.S. rules could act as non-tariff barriers to imported goods should be evaluated carefully.” *Id.* at 6. In short, similar to discount rates that vary from the 3 and 7 percent defaults, RIAs that include an analysis of global impacts are consistent with Circular A-4.

12. In addition, in the case of climate change, it is reasonable for agencies to conclude that the global impacts of greenhouse gases—a global pollutant which is being regulated around the world; where non-U.S. emissions affect U.S. citizens; and where U.S. emissions affect assets owned by U.S. companies abroad, the millions of U.S. citizens living abroad, U.S. military personnel stationed abroad, U.S. companies’ key foreign trading partners and international supply chains, and geopolitical security—would be a legitimate and appropriate focus for analysis, under the criteria established in Circular A-4.

13. Although Circular A-4 constitutes OMB’s guidance on best practices for regulatory analysis, that content of Circular A-4 is not mandated by any statute or regulation.³ Circular A-4 outlines recommendations and a set of standardized methods for agencies conducting RIAs. In practice, there is necessarily variation on how agencies apply and adapt the methodologies described in Circular A-4 to a particular regulatory action, and Circular A-4 recognizes the need for that variation.

³ The Regulatory Right-to-Know Act requires OMB to issue guidelines to standardize the most plausible measures of costs and benefits for the purposes of accounting of regulatory costs and benefits in OMB’s annual reports to Congress on the total costs and benefits of Federal rules and paperwork. 31 U.S.C. § 1105. Although Circular A-4 addresses that requirement and thus was issued partly pursuant to the Regulatory-Right-to-Know Act, Circular A-4 clarifies in its introduction that its guidance on regulatory analysis (as discussed in text) is provided pursuant to EO 12866.

Regulations take a wide variety of forms and address many different issues; as a result, RIAs will necessarily vary on a case-by-case basis. By outlining recommended practices, Circular A-4 helps facilitate the analytical procedures called for in EO 12866, which in turn helps bolster the analytical and evidence-based foundations for regulatory policymaking.

14. More specifically, the recommendations set forth in Circular A-4 must always yield to any specific statutory requirements or conditions. Accordingly, during our reviews of significant regulatory actions, OIRA does not represent or treat Circular A-4's individual provisions as a legally binding requirement on Executive Branch agencies, and I am unaware of any court having previously compelled adherence to Circular A-4 or any particular interpretation of Circular A-4.

15. By restricting agencies' approach to economic analyses, the Preliminary Injunction has the potential to substantially undermine the purposes of regulatory analysis, and undercuts Circular A-4's accommodation and encouragement of the exercise of agencies' expert judgment, including in the choice of discount rate and scope of analysis. Circular A-4 is meant to support agencies taking a rigorous approach to analyzing the impacts of regulatory actions, which necessarily requires that agencies, in consultation with OIRA, deploy their expertise and judgment in case-specific contexts. Circular A-4 explains that, because of its "special role in the rulemaking process" as a tool to inform the public and government decisionmakers about the effects of alternative actions, regulatory analysis should meet "minimum quality standards" and be "based on the best reasonably obtainable scientific,

technical, and economic information available.” *Circular A-4*, at 17. Tying agencies’ hands and preventing their selection of the best available data and methodological assumptions—including, for example, on the choice of discount rates—has the potential to undermine confidence in the quality of the regulatory analyses.

IMPACT OF THE COURT’S FEBRUARY 11, 2022 ORDER
ON ONGOING EXECUTIVE BRANCH AGENCY ACTIVITIES

Impact on Agency Rulemakings And Other Actions

16. The Preliminary Injunction prohibits Defendant agencies from “adopting, employing, treating as binding, or relying upon” any work product by the IWG and any estimates of the social cost of greenhouse gas emissions that are “based on global effects,” “do[] not utilize discount rates of 3 and 7 percent,” or “otherwise do[] not comply with Circular A-4.” OMB understands this injunction to require all affected RIAs addressing greenhouse-gas effects for pending agency rulemakings and published proposed rules to be re-done so that they either do not employ any estimate of the social cost of greenhouse gas emissions, or so that they use estimates that are developed using the court-ordered parameters.⁴ OMB similarly understands this injunction to require any other affected not yet finalized agency actions relying upon any work product by the IWG to be re-done so that they either do not employ any estimate of the social cost of greenhouse gas emissions, or so that they use estimates that are developed using the court-ordered parameters.

⁴ OMB understands the injunction to apply prospectively, and therefore not to reach agency actions that have already been finalized.

17. In OIRA's above-described role in coordinating interagency review of significant regulations, I have insight into the effect of the February 11, 2022 Preliminary Injunction ("the Preliminary Injunction") on the ongoing rulemaking and related activities of Executive Branch agencies. Agencies have also provided to OIRA additional details about the extent of likely effects to their rulemakings and other activities. In my capacity as OIRA's Deputy Administrator and based on such information, I understand that the Preliminary Injunction would impede a variety of pending agency rulemakings and actions. In particular, agencies would be required to redirect resources to revise already-drafted proposed rules, regulatory impact analyses, and other analyses in support of other agency actions, including in instances where a draft rule that incorporates the Working Group's Interim Estimates has already been submitted to OMB for review under E.O. 12866. I understand that a significant number of agency rules and actions would need to be postponed or reworked as a result of the Preliminary Injunction.

18. Based upon information made available to me in my official capacity, the Department of Energy has initially identified approximately twenty-one rulemakings that will be so affected; the EPA has initially identified approximately five; the Department of Transportation has initially identified approximately nine; and the Department of the Interior has initially identified approximately three. The Department of Transportation has also initially identified approximately sixty records of decision or environmental impact analyses required by the National Environmental Policy Act (NEPA) that will be so affected; and the Department of the

Interior has initially identified approximately twenty-seven such NEPA-mandated analyses.

19. For example, OIRA is currently reviewing a proposed rule from the Bureau of Land Management (“BLM”) on Waste Prevention for oil and gas leases on public lands.⁵ As BLM has explained, the goal of the proposed rule is to reduce the waste of natural gas, and BLM has projected an associated reduction in methane emissions.⁶ The proposed rule follows a 2018 rescission of an earlier rule governing the waste of natural gas from onshore Federal and Indian oil and gas leases. The 2018 rescission rule relied on an estimate of the social cost of methane that considered only “domestic” climate effects occurring strictly within U.S. geographic borders. 83 Fed. Reg. 49,184 (Sept. 28, 2018). In 2020, the U.S. District Court for the Northern District of California found that the domestic-only estimate of the social cost of methane had arbitrarily “fail[ed] to consider important aspects of the problem” by “ignor[ing],” for example, how methane emissions would affect foreign assets owned by U.S. companies, U.S. citizens and military personnel living or stationed abroad, effects to U.S. companies through foreign trading partners and international supply chains, and geopolitical security. *California v. Bernhardt*, 472 F. Supp. 3d 573, 613 (N.D. Cal. 2020). If BLM uses a domestic-only estimate of the social cost of methane, which fails to consider these direct impacts to U.S. welfare that methane emissions will cause through climate effects occurring outside U.S. borders, I understand that BLM would risk violating the California district court’s order.

⁵ See <https://www.reginfo.gov/public/do/eoDetails?rrid=220412>.

⁶ See <https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202110&RIN=1004-AE79>.

20. The Department of Energy (“DOE”) is under a court-ordered deadline to issue final energy conservation standards for manufactured housing by May 16, 2022. *Sierra Club v. Granholm*, No. 1:cv-17-02700-EGS (D.D.C. Mar. 15, 2021) (order on consent decree). To finalize those standards, DOE must complete its review under NEPA, and the 45-day comment period on the draft environmental impact statement (“EIS”) will end in approximately two weeks. 87 Fed. Reg. 2430 (Jan. 14, 2022). In the draft EIS on the alternative standards being considered for manufactured housing, DOE directs the public to review its recent presentations of the various alternatives’ climate effects using SC-GHG estimates, to “help the public . . . understand or contextualize the potential impacts of GHG emissions” and to “inform a comparison of alternatives.” DOE, *Draft Environmental Impact Statement for Proposed Energy Conservation Standards for Manufactured Housing* at 3-13 (2022). I understand that public commenters specifically requested DOE to present estimates of the SC-GHG in the DEIS to contextualize the alternatives. *Id.* at A-8. Contextualizing alternatives for the public is a key requirement under NEPA. 42 U.S.C. § 4332(2)(C)(iii). If DOE cannot employ the Interim Estimates to help contextualize the climate effects of alternative standards in the final EIS, and needs to develop new, additional analysis to help properly contextualize those effects, I understand it could complicate concluding the environmental review in time to meet the court deadline. Similarly, because the manufactured housing standards will have significant economic costs, cost savings, and other effects, DOE is required by EO 12866 to quantify the costs and benefits of alternatives in an RIA to accompany

publication of the final standards. If DOE cannot continue to use the Interim Estimates for purposes of its EO 12866 analysis, and in the development of a record to support their rulemaking under DOE's statutory criteria for setting energy efficiency standards, the development of a new adequate presentation of all the relevant costs and benefits could complicate DOE's ability to satisfy its requirements under EO 12866 and statute in time to meet the court-ordered deadline.

21. Similarly, I understand, based on information provided to OIRA, that DOI had already incorporated the Working Group's Interim Estimates into its NEPA analysis associated with several planned and potential oil and gas lease sales. For some of these lease sales, the NEPA materials had already been subjected to a public comment period, and the agency had finalized its responses to comments and revised its Environmental Assessments to address the public comments as appropriate. For example, with respect to planned onshore oil and gas lease sales, revising the NEPA analysis would be a burdensome and time-consuming process for the BLM, and, following those revisions, the Agency anticipates subsequently recirculating the revised analyses for 30 days public comment pursuant to agency practice and guidance. Furthermore, in other related contexts, some federal courts have faulted agencies for not considering the SC-GHG in their NEPA analyses if other costs and benefits, like royalties from coal and oil, have already been monetized. *E.g.*, *WildEarth Guardians v. Bernhardt*, No. CV 17-80-BLG-SPW, 2021 WL 363955, at *9 (D. Mont. Feb. 3, 2021) (explaining that "although NEPA does not require federal agencies to engage in a cost-benefit analysis, when an agency chooses to quantify the

socioeconomic benefits of a proposed action, it would be arbitrary and capricious for the agency to undervalue the socioeconomic costs of that plan by failing to include a balanced quantification of those costs,” including by failing to quantify climate costs); *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1190, 1191 (D. Colo. 2014); *Mont. Env’t Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1094–99 (D. Mont. 2017). Therefore, I understand that BLM risks potentially running afoul of other court precedents if it were to monetize other costs or benefits, such as coal and oil royalties, but not monetize the climate costs. And BLM risks running afoul of the Northern District of California ruling, *supra*, were it to use an estimate of the social cost of greenhouse gases that did not consider key impacts to U.S. welfare resulting from climate impacts that happen to occur beyond U.S. geographic borders.

22. Similarly, under the Mineral Leasing Act, BLM permits drilling for oil and gas extraction by approving Applications for Permits to Drill (“APDs”), after conducting appropriate NEPA analysis and providing for public comment. I understand that the Injunction has halted work by BLM on APDs for at least 18 wells on federal oil and gas leases in New Mexico, as the NEPA analysis being developed for these applications would have incorporated the now-enjoined estimates. BLM is still assessing how many other applications are similarly affected.

23. As another example, the Federal Transportation Administration (FTA) oversees a \$2-3 billion dollar grant program, called the Capital Investment Grants (CIG) program. Under FTA’s Final CIG Interim Policy Guidance, which was issued

pursuant to notice and comment, applicants must provide environmental analysis based on the Interagency Working Group's 2013 values for the social cost of carbon. I understand that, under the Preliminary Injunction, FTA must revise the Final CIG Interim Policy Guidance to remove reliance on the Interagency Working Group's 2013 values for the social cost of carbon, because those values were based upon the global effects of greenhouse gas emissions. But any revision requires notice and comment, thus disrupting the CIG program. FTA has estimated this delay could stretch on for months.

24. The cumulative burden of the Preliminary Injunction is quite significant. Regulatory impact analyses and analyses in support of other agency actions are often very complex and time-intensive studies that agencies can spend months developing and refining. Changing the value of key parameters such as discount rates, the social cost of greenhouse gases, and other similar numbers would often require agencies to re-run numerical models and simulations that they may be using to develop impact assessments. Re-doing the regulatory analyses also often would require agencies to restart the long process of intra-agency and inter-agency review of the analysis and regulatory proposals, which can take even more time. Re-doing the analyses for the non-regulatory actions described above (e.g., NEPA actions, grants guidance) would similarly tax agency resources. Because agencies have relatively fixed staffing constraints, the human resources needed to re-do an analysis also presents significant opportunity costs that could preclude agencies from conducting analysis and developing policy on other pressing issues called for by statutes and by

Presidential priorities. Such delays could likely include delaying agencies in their efforts to offer clarifying guidance to regulated entities, states, and other stakeholders; the uncertainty caused by such delays can be costly.

25. In some instances, the burdens imposed by the Preliminary Injunction go well beyond delay and waste of resources. In particular, in the wake of the Preliminary Injunction, agencies are now struggling to reconcile their conflicting obligations to comply with the Court's order and with the requirements of the APA and other relevant statutes.

26. For example, a conflict may exist between the Preliminary Injunction and agencies' typical analysis of compliance costs. Agencies typically count all compliance costs, even if they accrue to foreign-based corporations or publicly-traded companies with significant foreign ownership interests. Yet if agencies are prohibited by the Preliminary Injunction from considering, for example, the global climate benefits of regulatory actions, it may be inconsistent for agencies to continue considering the global compliance costs of those same actions. Agencies then either may be forced to attempt to redo their cost estimates to subtract out any costs that would fall to foreign shareholders of publicly traded companies—a practically challenging and sometimes unrealistic endeavor that could decrease transparency about total compliance costs—or else risk proceeding with an analysis that counts some non-domestic costs, but restricts the analysis and consideration of global benefits. In any case, based on my understanding of the issues that agencies are considering, agencies are spending considerable resources and delaying a myriad of regulatory actions as they fully

consider the implications of a changed scope of analyses, due to the Preliminary Injunction.

Impact on Internal Agency Activities and Executive Branch Coordination

27. In addition to prohibiting Executive Branch agencies from “adopting, employing, treating as binding, or relying upon” the work of the IWG and any estimates of the social cost of greenhouse gas emissions based on global effects and discount rates of 3 and 7 percent, the Preliminary Injunction also prohibits agencies from “[r]elying upon or implementing Section 5 of Executive Order 13990 in any manner.” The Executive Branch understands this order could be read to prohibit Defendant agencies from using the work of the IWG even in their internal deliberations.

28. Based on my personal knowledge and information made available to me in my official capacity, the Court’s February 11, 2022 order has also disrupted the functioning of multiple Cabinet agencies, including in the Office of Management and Budget. In light of the breadth of the Court’s order, staff across the affected agencies were suddenly put in the position of having to assess how to stop attending meetings or developing work product that bore some relation to the social cost of greenhouse gases. This range of impacted work included ordinary budgetary discussions, work on proposed regulatory actions, reviews of regulatory actions targeted for publication, and even the agendas of meetings that may have touched on these issues.

29. For example, as a result of the Preliminary Injunction, agencies including the EPA have cancelled or postponed all-staff webinar training sessions at which the IWG's work or the social costs of greenhouse gases were to be discussed.

30. As another example, to ensure compliance with the Preliminary Injunction, OMB has instructed agencies not to send comments on sections of draft documents that refer to the social cost of greenhouse gas emissions.

31. Federal government scientists and other experts, like those working at DOE's national laboratories, produce a variety of public and internal research reports, and are under multiple obligations to use the best available scientific, economic, and technological findings and otherwise ensure the quality and integrity of all their publications. *See e.g.*, Dep't of Energy, *Scientific Integrity Policy* (Jan. 4, 2017),⁷ OMB, M-19-15, Memorandum on Improving Implementation of the Information Quality Act (Apr. 24, 2019); Presidential Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking (Jan. 27, 2021). The Preliminary Injunction could prevent federal scientists from citing, referencing, or otherwise using the best available science, including that contained in various IWG work products. And the Preliminary Injunction suspends EO 13990 implementation, including the process explicitly designed to ensure the SC-GHG estimates are informed by the latest science and economics. As a result, the Preliminary Injunction could force federal scientists to violate various scientific

⁷ Available at <https://energy.gov/sites/prod/files/2017/01/f34/DOE%20Scientific%20Integrity%20Policy%2001112017.PDF> DOE Scientific Integrity Policy (energy.gov).

integrity policies that require use of the best available information, and so could interfere with the free flow of research information to the scientific community and the public.

32. In addition, based on information made available to me, I understand that the harms to the Executive Branch from the Preliminary Injunction could be particularly acute when it comes to the President’s conduct of foreign affairs. As E.O. 13990 explained, a full accounting of climate impacts “supports the international leadership of the United States on climate issues.” The Preliminary Injunction has interrupted bilateral discussion important to the President’s conduct of foreign affairs.

33. For example, in 2016, the United States announced that it would align its estimates of the social cost of carbon with Canada.⁸ Canada has long adapted the IWG’s methodology for use in their own analysis, and in fact has long looked to the United States in particular as a partner in advocating for rigorous cost-benefit analysis through our longstanding Regulatory Cooperation Council dialogues.⁹ Canada has recently begun updating its own SC-GHG estimates, *see* IWG, *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide—Interim Estimates under Executive Order 13990* at 35 (2021), and the IWG’s technical experts had been engaging in regular, ongoing conversations with Canada about these efforts. In light of the Preliminary Injunction, the IWG’s technical experts have ceased

⁸ See <https://obamawhitehouse.archives.gov/blog/2016/06/29/economic-benefits-50-percent-target-clean-energy-generation-2025>.

⁹ See, e.g., https://publications.gc.ca/collections/collection_2016/eccc/En14-202-2016-eng.pdf and <https://canadagazette.gc.ca/rp-pr/p1/2020/2020-12-19/html/reg2-eng.html>. And for more general information on Regulatory Cooperation, see <https://www.trade.gov/rcc>

communication with their counterparts in Canada. To date, Canada has followed the U.S. IWG’s approach and adopted a “global perspective” in its estimates of the SC-GHG, considering how its emissions impact the rest of the world, including U.S. welfare.¹⁰ However, if the Interagency Working Group is now prohibited from considering global climate effects, were Canada to follow suit and consider Canada-only estimates of the social cost of greenhouse gases—and so ignore the impacts of Canadian emissions to the United States and the rest of the world—U.S. welfare could suffer.

34. The United States also has an interest in engaging in other international discussions involving the SC-GHG. The United States has dozens of bilateral agreements on science and technology with key foreign partners, like Germany,¹¹ and holds regular discussions with countries on the science, technology, and economics of climate change and energy policy.¹² The Preliminary Injunction threatens to curtail what materials the federal government can rely upon in preparing for such meetings and has the potential to undercut the federal government’s ability to fully engage in international dialogues and to advocate for U.S. interests in discussions of climate economics and related topics. Similarly, the United States has an interest in engaging in multilateral discussions, such as on the energy policy reviews conducted by the

¹⁰ See https://publications.gc.ca/collections/collection_2016/eccc/En14-202-2016-eng.pdf at 1; see also *id.* at 12 (“Key decisions of the U.S. Group, such as the use of global values...were consistent with insights from climate science.”); *id.* at 13 (“Although both countries will feel the impacts of climate change differently, the costs included in the Social Cost of Carbon are global in nature.”).

¹¹ See <https://www.state.gov/wp-content/uploads/2020/08/TIF-2020-Full-website-view.pdf>.

¹² *E.g.*, <https://www.state.gov/us-france-science-technology-cooperation> (Dec. 7, 2021).

Asian Development Bank that consider the social cost of carbon.¹³ This raises questions as to whether technical experts can engage in productive dialogues with Canada, Germany, and other international counterparts.

Impact on the Interagency Working Group on Social Cost of Greenhouse Gases

35. In addition, in prohibiting Executive Branch agencies from “[r]elying upon or implementing Section 5 of Executive Order 13990 in any manner,” the Preliminary Injunction has effectively shuttered the Interagency Working Group (IWG). As discussed above, and as clarified in EO 13990, the task of the IWG, which is made up primarily of technical experts from at least 14 different agencies and offices, is to ensure that the information the government considers about climate change is based on the latest economics and science.

36. As a first step in this process, the IWG released a Technical Support Document (interim TSD) on February 26, 2021, which provides an interim update of SC-GHG estimates using identical methods and inputs to those presented in the 2016 version of the TSD, including the same three peer-reviewed integrated assessment models in use since 2010. *See* IWG, 2021 Interim TSD, *supra*. The interim TSD also discusses the scientific and economic advances that have been made since the time of the last updates to the SC-GHG estimates.

37. Next, the IWG has requested and received detailed public comment on the interim TSD, including much diverse input and advice on how to best incorporate the latest peer-reviewed science and economics literature into an updated set of SC-GHG

¹³ *See* <https://www.adb.org/sites/default/files/institutional-document/737086/energy-policy-r-paper.pdf> at 11. Note that the United States is a nonregional member of the Asian Development Bank.

estimates. The goal of the next update is to be reflective of updated science and economics in general, and also to address the 2017 Recommendations of the National Academies of Sciences, Engineering, and Medicine for how to value climate damages.

38. Since that public solicitation, a group of dozens of technical experts had been synthesizing and summarizing that detailed input, running models, summarizing information, and generally working intensely toward the goal of providing updated estimates in the next couple of months. In addition, Section 5 of EO 13990 calls for recommendations with respect to the use of updated estimates in budgeting and procurement, which an interagency group is also working to provide.

39. Finally, it is important to note that the IWG intends to subject the next set of estimates to additional public comment, as well as peer review. This means that there will be an additional opportunity for both general and expert input into whatever specific discount rate or rates are chosen, as well as the geographic scope of the updated estimates. In fact, the process for convening the peer review was already underway: on January 25, 2022, EPA published a request for nominations of experts for the peer review. 87 Fed. Reg. 3801 (Jan. 25, 2022). Under the Preliminary Injunction, that important process to independently review the IWG's work, including through the selection of experts by an independent contractor hired for that purpose, is now stopped.

40. As a result of the Preliminary Injunction, all this effort has ceased, affecting the ability of the Federal government to avail itself of the latest scientific and economic information in decision making, including by hampering the ability of the

President's advisors to provide him with the most up-to-date information on the impacts of climate change.

41. The Preliminary Injunction would also likely lead to government resource waste related to federal contracting costs. To manage the IWG's responsibilities under EO 13990, the IWG's technical lead agency has hired four contractors, with a number of associated sub-contractors included in that effort. Three of the contracts are fixed price and offer technical support to help manage the data-intensive modeling efforts, including use of super-computer resources not available in the federal government. I understand there is a risk the federal government likely would be responsible for full payment on these contracts, even if the IWG's work is paused. It is therefore further possible that, if the IWG is permitted at some point in the future to resume work on some set of SC-GHG estimates, the federal government may need to commit additional resources to enter into new contracts to complete the work that was left incomplete during this pause. A fourth contractor, who is managing the public comment and peer review process, bills based on time and materials expended. The resource costs in that circumstance are related to losses in retaining viable peer review candidates and continuity in the peer review process. Finally, general wasted resources will accrue not only for IWG contractors but also to any federal agency that contracts for RIA or EIS support as a result of pausing and potential restarting of efforts as a result of this injunction.

I certify under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Executed this 19th day of February, 2022

A handwritten signature in black ink, appearing to read "Dominic J. Mancini". The signature is written in a cursive, flowing style.

DOMINIC J. MANCINI

Exhibit G

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MISSOURI
EASTERN DIVISION

STATE OF MISSOURI, et al.,)	
)	
Plaintiffs,)	
)	
v.)	Case No. 4:21-cv-00287-AGF
)	
JOSEPH R. BIDEN, JR., et al.,)	
)	
Defendants.)	

MEMORANDUM AND ORDER

The State of Missouri and 12 other states¹ brought this suit against President Joseph R. Biden, Jr. and several other executive branch departments and officials, challenging the President’s Executive Order 13990 (“EO 13990”), which, in relevant part, establishes an Interagency Working Group on the Social Cost of Greenhouse Gases (the “Working Group”) and directs the Working Group to publish interim—and, by January of 2022, final—values for the “social costs” of greenhouse gas emissions. The Executive Order further provides that agencies “shall use [the Interim Estimates] when monetizing the value of changes in greenhouse gas emissions resulting from regulations and other relevant agency actions until final values are published.” 86 Fed. Reg. 7037.

The matter is now before the Court on two motions: (1) Plaintiffs’ motion (ECF No. 17) for a “preliminary injunction prohibiting Defendants (excluding the President) from using the social cost of greenhouse gases promulgated in the February 26, 2021

¹ These are the States of Alaska, Arizona, Arkansas, Indiana, Kansas, Montana, Nebraska, Ohio, Oklahoma, South Carolina, Tennessee, and Utah.

Technical Support Document, [ECF No. 6-2], in any rule making or federal action where there is a statutory command to consider costs or costs are permitted by statute until this case is resolved on appeal”² (ECF No. 17 at 1); and (2) Defendants’ motion (ECF No. 27) to dismiss the complaint for lack of subject matter jurisdiction and for failure to state a claim.

The Court heard oral argument on both motions on August 25, 2021. Upon review of the entire record and for the reasons set forth below, the Court concludes that Plaintiffs lack standing and that their claims are not ripe for adjudication. Therefore, the Court will grant Defendants’ motion to dismiss for lack of subject matter jurisdiction and will dismiss Plaintiffs’ motion as moot.

BACKGROUND

On January 20, 2021, President Biden issued EO 13990, titled “Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis.” 86 Fed. Reg. 7037. Section 5 of this Order, titled “Accounting for the Benefits of Reducing Climate Pollution,” provides in full:

(a) It is essential that agencies capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account. Doing so facilitates sound decision-making, recognizes the breadth of climate impacts, and supports the international leadership of the United States on climate issues. The “social cost of carbon” (SCC), “social cost of nitrous oxide” (SCN), and “social cost of methane” (SCM) are estimates of the monetized damages associated with incremental increases in greenhouse

² In their supporting brief, Plaintiffs narrow their request, asking only to “preliminarily enjoin all defendants, except for the President, from using the social cost of greenhouse gases promulgated in the February 26, 2021 Technical Support Document as binding values in any agency action.” ECF No. 18 at 59.

gas emissions. They are intended to include changes in net agricultural productivity, human health, property damage from increased flood risk, and the value of ecosystem services. An accurate social cost is essential for agencies to accurately determine the social benefits of reducing greenhouse gas emissions when conducting cost-benefit analyses of regulatory and other actions.

(b) There is hereby established an Interagency Working Group on the Social Cost of Greenhouse Gases (the “Working Group”). The Chair of the Council of Economic Advisers, Director of OMB, and Director of the Office of Science and Technology Policy shall serve as Co-Chairs of the Working Group.

(i) Membership. The Working Group shall also include the following other officers, or their designees: the Secretary of the Treasury; the Secretary of the Interior; the Secretary of Agriculture; the Secretary of Commerce; the Secretary of Health and Human Services; the Secretary of Transportation; the Secretary of Energy; the Chair of the Council on Environmental Quality; the Administrator of the Environmental Protection Agency; the Assistant to the President and National Climate Advisor; and the Assistant to the President for Economic Policy and Director of the National Economic Council.

(ii) Mission and Work. The Working Group shall, as appropriate and consistent with applicable law:

(A) publish an interim SCC, SCN, and SCM within 30 days of the date of this order, which agencies shall use when monetizing the value of changes in greenhouse gas emissions resulting from regulations and other relevant agency actions until final values are published;

(B) publish a final SCC, SCN, and SCM by no later than January 2022;

(C) provide recommendations to the President, by no later than September 1, 2021, regarding areas of decision-making, budgeting, and procurement by the Federal Government where the SCC, SCN, and SCM should be applied;

(D) provide recommendations, by no later than June 1, 2022, regarding a process for reviewing, and, as appropriate, updating, the SCC, SCN, and SCM to ensure that these costs are based on the best available economics and science; and

(E) provide recommendations, to be published with the final SCC, SCN, and SCM under subparagraph (A) if feasible, and in any event by no later than June 1, 2022, to revise methodologies for calculating the SCC, SCN, and SCM, to the extent that current methodologies do not adequately take account of climate risk, environmental justice, and intergenerational equity.

(iii) Methodology. In carrying out its activities, the Working Group shall consider the recommendations of the National Academies of Science, Engineering, and Medicine as reported in *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide* (2017) and other pertinent scientific literature; solicit public comment; engage with the public and stakeholders; seek the advice of ethics experts; and ensure that the SCC, SCN, and SCM reflect the interests of future generations in avoiding threats posed by climate change.

86 Fed. Reg. 7040-41.

Interim Estimates

On February 26, 2021, the Working Group issued a document entitled “Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990” (“Interim Estimates”). These Interim Estimates are purportedly identical to prior estimates developed by another interagency working group under President Barack Obama in 2016, except that they have been adjusted for inflation. *See* ECF No. 6-2, Working Group, *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide: Interim Estimates under E.O. 13990* (Feb. 2021), also available at

https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf.

Plaintiffs argue that the Interim Estimates are faulty for a number of reasons, including that the underlying factual inputs and modeling assumptions are arbitrary and lack a reasonable basis.³ Plaintiffs rely on a sworn declaration of Kevin D. Dayaratna, a statistician and data scientist at the Heritage Foundation’s Center for Data Analysis, in support of their assertions. Because EO 13990 provides that federal agencies “shall” use the Interim Estimates “when monetizing the value of changes in greenhouse gas emissions resulting from regulations and other relevant agency actions until final values are published,” 86 Fed. Reg. 7040, Plaintiffs assert that the Interim Estimates “will inevitably be used to justify increased regulation and restrictions in innumerable areas, affecting virtually every aspect of daily life.” ECF No. 18 at 19.

In support of this argument, Plaintiffs cite an academic review in 2017, which identified “at least eighty-three separate regulatory or planning proceedings conducted by six different federal agencies [that] have used the SCC or SCM in their analyses” through

³ For example, Plaintiffs describe in detail why the “discount rate” applied by the Working Group in developing the Interim Estimates was faulty. The discount rate is a “percentage factor designed to calculate the net present value of the future anticipated damages from a marginal increase in emissions of a particular gas.” ECF No. 18 at 17. According to Plaintiffs, the discount rates applied by the Working Group were too low, resulting in exaggerated “social costs” of the corresponding greenhouse gases. *See id.*

mid-2016. Am. Compl., ECF No. 6 at ¶¶ 160-61. These included agency actions related to energy, transportation, and agriculture, among other areas, and regulations of everything from ozone standards to household appliances. *Id.*

Complaint

Plaintiffs filed suit on March 8, 2021. In their amended complaint, filed on March 26, 2021, they assert four causes of action: (1) “Violation of the Separation of Powers,” (2) “Violation of Agency Statutes,”⁴ (3) “Procedural Violation of the Administrative Procedure Act (APA),” and (4) “Substantive Violation of the APA.” Plaintiffs seek declaratory and injunctive relief.

Post-Complaint Notice and Guidance from the Executive Office

On May 7, 2021, the Office of Management and Budget (“OMB”) published a notice in the Federal Register, inviting public comments “on the [Interim Estimates] as well as on how best to incorporate the latest peer-reviewed science and economics literature in order to develop an updated set of SC-GHG estimates.” OMB, *Notice of Availability and Request for Comment on “Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates Under E.O. 13990”*, 86 Fed. Reg. 24669, 24669 (May 7, 2021). Comments were due by June 21, 2021. *Id.*

On June 3, 2021, the Office of Information and Regulatory Affairs (“OIRA”)

⁴ Specifically, Plaintiffs assert that “Section 5 of EO 13990 and the Working Group’s Interim Estimates violate the statutes that confer authority on various federal agencies to conduct cost-benefit analyses in regulatory actions that involve emissions of carbon dioxide, methane, and/or nitrous oxide.” ECF No. 6 at ¶ 204.

issued a “Frequently Asked Questions” document related to the Interim Estimates. *See* ECF No. 28-4, OIRA, *Social Cost of Greenhouse Gas Emissions: Frequently Asked Questions (FAQs)*, (June 3, 2021), *also available at* <https://www.whitehouse.gov/wp-content/uploads/2021/06/Social-Cost-of-Greenhouse-Gas-Emissions.pdf>. The document states that agencies should follow EO 13990’s requirement to use the Interim Estimates “as they follow other requirements for preparing E.O. 12866 benefit-cost analysis.”⁵ *Id.* at 1. The document further states that “[d]irectives issued in executive orders and OIRA guidance are always made subject to applicable law. . . . When an agency conducts benefit-cost analysis pursuant to specific statutory authorities, those authorities must control the agency’s development and use of the analysis in taking an agency action the issue.” *Id.* at 2.

Motion to Dismiss

Defendants move to dismiss Plaintiffs’ amended complaint for lack of subject matter jurisdiction pursuant to Federal Rule of Civil Procedure 12(b)(1) and, alternatively, for failure to state a claim pursuant to Rule 12(b)(6). Defendants assert that Plaintiffs lack standing to pursue their claims because their allegations of injury all stem from hypothetical future regulations that they speculate may be issued in reliance on the

⁵ EO 12866, issued by President Bill Clinton, directs agencies to follow certain principles, including assessing costs and benefits of available regulatory alternatives and selecting approaches that maximize net benefits, “unless a statute requires another regulatory approach.” Exec. Order No. 12866, *Regulatory Planning and Review*, 58 Fed. Reg. 51735 § 1(a) (Sept. 30, 1993). It also establishes a regulatory-review process to be coordinated by OMB and OIRA. *Id.*

Interim Estimates. Defendants further maintain that Plaintiffs’ alleged injuries are not redressable by a favorable decision in this lawsuit because, even without EO 13990 or the Interim Estimates, agencies may consider the social costs of greenhouse gases and may arrive at the same—or, from Plaintiffs’ perspective, worse—regulations either in light of those costs or in light of the myriad other factors considered by agencies in the rulemaking process.⁶

Regarding Plaintiffs’ additional allegations of harm to their sovereign interests or to their ability to participate in the notice-and-comment rulemaking, Defendants contend that these, too, are neither concrete nor particularized enough to demonstrate Article III standing.

For similar reasons, Defendants argue that Plaintiffs’ claims are not ripe. Rather, according to Defendants, “[i]f an agency one day relies on the Interim Estimates to justify some action that actually causes Plaintiffs a concrete injury, they can challenge that specific agency action (including its use of the Interim Estimates) at that time.” ECF No. 28 at 43.

In any event, Defendants argue that Plaintiffs’ claims are meritless. As to Count One, Defendants maintain that there is no basis to imply an equitable cause of action arising from an alleged violation of separation of powers. If there were, Defendants

⁶ Defendants argue that a separate redressability problem arises because Plaintiffs’ request for relief would necessarily require the Court to enjoin the President’s exercise of his official duties, which the Court cannot do. Thus, at a minimum, Defendants ask that the Court dismiss President Biden as a Defendant.

contend that the claim would fail here because EO 13990 is well within the President’s Article II authority and is consistent with the longstanding presidential practice of requiring cost-benefit analyses. Defendants note that that, since the Ninth Circuit’s decision in *Center for Biological Diversity v. National Highway Traffic Safety Administration*, 538 F.3d 1172 (9th Cir. 2008),⁷ federal agencies have specifically employed estimates of the social cost of greenhouse gases prepared by interagency working groups in connection with related cost-benefit analyses.⁸

Regarding Count Two, Defendants contend that no violation of agency statutes could occur because EO 13990 expressly defers to any conflicting federal statute.

As to Plaintiffs’ claims under the APA (Counts Three and Four), Defendants maintain that Plaintiffs have not identified a final agency action from which judicial

⁷ In *Center for Biological Diversity*, the Ninth Circuit held that an agency’s failure to monetize the benefits of greenhouse gas emissions reduction as part of its cost-benefit analysis before issuing a rule setting fuel economy standards was arbitrary and capricious. 538 F.3d at 1200 (noting that “while the record shows that there is a range of values, the value of carbon emissions reduction is certainly not zero”).

⁸ In 2017, President Donald J. Trump issued EO 13783, which disbanded the Working Group and withdrew its prior analyses as “no longer representative of the administration’s policy.” Exec. Order 13783 § 5(b), Promoting Energy Independence and Economic Growth, 82 Fed. Reg. 16093 (Mar. 28, 2017). However, President Trump further ordered that “when monetizing the value of changes in greenhouse gas emissions resulting from regulations, including with respect to the consideration of domestic versus international impacts and the consideration of appropriate discount rates, agencies shall ensure, to the extent permitted by law, that any such estimates are consistent with the guidance contained in [the Office of Management and Budget] Circular A-4.” *Id.* § 5(c). According to Defendants, federal agencies under President Trump continued to estimate the social cost of greenhouse gases in their cost-benefit analysis, albeit applying different models to calculate those costs, such as a higher discount rate.

review may be sought; that neither the President nor the Working Group is an agency subject to suit under the APA; and that even if the Interim Estimates were subject to notice-and-comment requirements under the APA, Plaintiffs' claim would still fail under the APA's harmless-error rule.

Motion for Preliminary Injunction

Plaintiffs oppose Defendants' motion to dismiss and affirmatively move to "preliminarily enjoin all defendants, except for the President, from using the social cost of greenhouse gases promulgated in the [Interim Estimates] as binding values in any agency action." ECF No. 18 at 59. Plaintiffs assert that the Court "may decide to remand for the Interim [Estimates] to proceed through notice-and-comment or invalidate them as arbitrary and capricious." ECF No. 35 at 25. Plaintiffs also request a prompt ruling "[d]ue to the finality of any rules being promulgated now and the impending issuance of new social costs of greenhouse gases in January 2022." ECF No. 17 at 1.

In response to Defendants' assertions regarding standing and ripeness, Plaintiffs argue that there is nothing hypothetical about how agencies will use the Interim Estimates. According to Plaintiffs, EO 13990 mandates that federal agencies adopt the Interim Estimates in future rulemaking, regardless of Plaintiffs' objections thereto and without any public input. Plaintiffs contend that their injuries are not speculative because the Interim Estimates are designed to and "will inevitably be used to justify increased regulatory costs in foundational sectors of the American economy, including energy, agriculture, and manufacturing." ECF No. 35 at 9.

Plaintiffs maintain that if they wait to challenge the Interim Estimates until future regulations based on those numbers are issued—either in the notice-and-comment phase or through judicial review—their objections “will be disregarded” and “will receive no meaningful consideration.” ECF No. 35 at 9, 11. Plaintiffs likewise maintain that their claims are ripe because the Interim Estimates are a “a self-executing regulation” that will result in immediate injuries to Plaintiffs in the form of “federal regulations using the Interim Values that will encroach on Plaintiff States’ authority in areas subject to traditional state regulation.” ECF No. 35 at 27.

Next, Plaintiffs argue that all four factors relevant to the preliminary injunction analysis favor them. Plaintiffs argue that they are likely to succeed on the merits of Count One (Violation of the Separation of Powers) and Count Three (Procedural Violation of the APA) of their amended complaint.⁹ Regarding Count One, Plaintiffs argue that “dictating binding values for the social cost of greenhouse gases for use in federal programs is a quintessentially legislative power that lies exclusively with Congress.” ECF No. 18 at 22. Thus, Plaintiffs contend that Section 5 of EO 13990 is not a valid exercise of executive power but an exercise of legislative power that requires statutory authority.

⁹ Although Plaintiffs’ motion for preliminary injunction does not address the merits of Counts Two and Four, Plaintiffs discuss these counts in their opposition to Defendants’ motion to dismiss. There, Plaintiffs assert that Count Two plausibly alleges that the Working Group is acting *ultra vires*, or without statutory authority, and that Count Four plausibly alleges that the Working Group is an agency and the issuance of the Interim Estimates a final agency action.

Regarding Count Three, Plaintiffs argue that the Working Group is an agency under the APA; that the binding nature of the Interim Estimates render them a final agency action and a substantive rule under the APA; and that the Working Group violated the APA's procedural requirements when it promulgated the Interim Estimates without providing notice to the public and an opportunity to comment.

Plaintiffs further assert that, absent a preliminary injunction, they will suffer irreparable injury in the form of: (i) deprivation of their ability to file comments objecting to the Interim Estimates, (ii) deprivation of their ability to participate meaningfully in future federal agency proceedings, because the Interim Estimates will be essentially shielded from further review; (iii) injury to their sovereign interests in administering "cooperative-federalism programs,"¹⁰ because EO 13990 effectively mandates Plaintiffs to employ the Interim Estimates in administering such programs; (iv) injury to Plaintiffs' proprietary interests, because the cost of energy and other regulatory goods that Plaintiffs consume will "necessarily increase under the increased regulation mandated by [EO 13990] and the Interim Estimates" (ECF No. 18 at 51); and (v) the federalism-based injury inherent in any violation of the separation of powers.

Finally, Plaintiffs assert that a preliminary injunction that restores the status quo will impose no cognizable harm on Defendants and will serve the public interest by promoting democratic accountability.

¹⁰ As one example of a cooperative-federalism program, Plaintiffs cite the permitting of new stationary sources under the Clean Air Act.

In response, Defendants argue that the Court cannot reach Plaintiffs’ motion because the Court lacks subject matter jurisdiction. In any event, Defendants maintain that Plaintiffs would not be entitled to a preliminary injunction because their claims are meritless, they cannot show any imminent or irreparable harm, and an injunction would not serve the public interest.¹¹

DISCUSSION

Standing

“The law of Article III standing, which is built on separation-of-powers principles, serves to prevent the judicial process from being used to usurp the powers of the political branches.” *Clapper v. Amnesty Int’l USA*, 568 U.S. 398, 408 (2013). “To establish Article III standing, plaintiffs must show (1) an injury in fact, (2) a causal relationship between the injury and the challenged conduct, and (3) that a favorable decision will likely redress the injury.” *Animal Legal Def. Fund v. Vaught*, No. 20-1538, 2021 WL 3482998, at *1 (8th Cir. Aug. 9, 2021) (citing *Lujan v. Defs. of Wildlife*, 504 U.S. 555 (1992)). These requirements assure that “there is a real need to exercise the power of judicial review in order to protect the interests of the complaining party.” *Summers v. Earth Island Inst.*, 555 U.S. 488, 493 (2009) (internal citations omitted).

¹¹ In addition to the parties’ briefs, the Court has received amicus curiae briefs in support of Plaintiffs’ motion for preliminary injunction on behalf of the Texas Public Policy Foundation (ECF No. 26) and the Committee for a Constructive Tomorrow (ECF No. 33).

“The plaintiffs bear the burden of establishing these elements, and must support each element in the same way as any other matter on which they bear the burden of proof.” *Vaught*, 2021 WL 3482998, at *1 (citing *Lujan*, 504 U.S. at 561). “On a motion to dismiss, therefore, the plaintiffs must allege sufficient facts to support a reasonable inference that they can satisfy the elements of standing.” *Vaught*, 2021 WL 3482998, at *1. “The plaintiff must assert facts that affirmatively and plausibly suggest that the pleader has the right he claims (here, the right to jurisdiction), rather than facts that are merely consistent with such a right.” *In re Polaris Mktg., Sales Pracs., & Prod. Liab. Litig.*, No. 20-2518, 2021 WL 3612758, at *2 (8th Cir. Aug. 16, 2021) (citation omitted).

Injury in fact is “‘an invasion of a legally protected interest’ that is ‘concrete and particularized’ and ‘actual or imminent, not conjectural or hypothetical.’” *Spokeo, Inc. v. Robins*, 578 U.S. 856, 136 S. Ct. 1540, 1548, *as revised* (May 24, 2016) (quoting *Lujan*, 504 U.S. at 560)). “A ‘concrete’ injury must be ‘*de facto*’; that is, it must actually exist” in reality, rather than in the abstract.” *Spokeo*, 136 S. Ct. at 1548. “For an injury to be ‘particularized,’ it must affect the plaintiff in a personal and individual way.” *Id.*

“Although imminence is concededly a somewhat elastic concept, it cannot be stretched beyond its purpose, which is to ensure that the alleged injury is not too speculative for Article III purposes—that the injury is *certainly* impending.” *Clapper*, 568 U.S. at 409 (emphasis in original and citations omitted). “[A]llegations of *possible* future injury are not sufficient.” *Id.* (emphasis in original).

“For causation to exist, the injury has to be fairly traceable to the challenged action of the defendant, and not the result of the independent action of some third party not before the court.” *Agred Found. v. U.S. Army Corps of Eng’g*, 3 F.4th 1069, 1073 (8th Cir. 2021) (citation omitted). This “requires the plaintiff to show a sufficiently direct causal connection between the challenged action and the identified harm. That connection cannot be overly attenuated.” *Id.*

“[W]hen the plaintiff is not himself the object of the government action or inaction he challenges, standing is not precluded, but it is ordinarily substantially more difficult to establish.” *Lujan*, 504 U.S. at 562. “To satisfy that burden, the plaintiff must show at the least that third parties will likely react in predictable ways.” *California v. Texas*, 141 S. Ct. 2104, 2117 (2021) (citing *Dep’t of Commerce v. New York*, 139 S. Ct. 2551, 2566 (2019)).

Redressability, the third element of standing, requires plaintiff to show that “it is likely, as opposed to merely speculative, that the injury will be redressed by a favorable decision.” *Lujan*, 504 U.S. at 561. In assessing redressability, the court must “consider the relationship between the judicial relief requested and the injury suffered.” *California v. Texas*, 141 S. Ct. 2104, 2115 (2021).

Plaintiffs have failed to establish any of these three elements.

Injury in Fact

Plaintiffs ask the Court to assume that at some point in the future, one or more agencies will “inevitably” issue one or more regulations that rely in some way upon the

Interim Estimates; that such agency will “inevitably” disregard any objections to the methodology by which the Interim Estimates were calculated; and that this yet-to-be-identified regulation will then harm Plaintiffs in a concrete and particularized way. This “theory of standing, which relies on a highly attenuated chain of possibilities, does not satisfy the requirement that threatened injury must be certainly impending.” *See Clapper*, 568 U.S. at 410.

Summers v. Earth Island Institute, 555 U.S. 488 (2009) is instructive. There, the Supreme Court held that environmental organizations lacked standing to challenge regulations that exempted a salvage sale of timber on the ground that they failed to demonstrate injury in fact. In so reasoning, the Supreme Court explained that the regulations at issue “neither require[d] nor forb[ade] any action on the part of the [organizations]” but instead merely prescribed “standards and procedures” that governed “the conduct of Forest Service officials engaged in project planning.” 555 U.S. at 493; *see also Clapper*, 568 U.S. at 401 (holding that the respondents’ theory that there was “an objectively reasonable likelihood that their communications will be acquired under [challenged statute permitting electronic surveillance] at some point in the future [was] . . . too speculative to satisfy the well-established requirement that threatened injury must be ‘certainly impending’”).

Likewise here, EO 13990 neither requires nor forbids any action on the part of Plaintiffs but instead merely prescribes standards and procedures governing the conduct of federal agencies engaged in rulemaking and other agency actions when monetizing the

value of changes in greenhouse gas emissions. In such cases, standing is “substantially more difficult to establish.” *Lujan*, 504 U.S. at 562.

Plaintiffs argue that cases like *Summers* and *Clapper* do not apply “because instead of merely authorizing the injury, . . . the Executive Order mandates the Interim [Estimates].”¹² ECF No. 35 at 21. But Interim Estimates, alone, do not injure Plaintiffs. *Cf. City of Kennett, Mo. v. Env’t Prot. Agency*, 887 F.3d 424, 431–32 (8th Cir. 2018) (holding that a city had standing to challenge a “total maximum daily load” standard for pollutants in a particular ditch where the standard directly injured the city in the form of compliance costs). The injury that Plaintiffs fear is from hypothetical future regulation possibly derived from these Estimates. That injury is not concrete and therefore insufficient for standing. *See Nat’l Ass’n of Home Builders v. E.P.A.*, 667 F.3d 6, 13 (D.C. Cir. 2011) (rejecting theory of standing based on only the “possibility of [harmful] regulation” by federal agency) (emphasis in original).

¹² Plaintiffs also argue that “*Summers* merely stands for the unremarkable proposition that a plaintiff lacks an injury to challenge procedural regulations after settling the substantive claim causing the injury.” ECF No. 35 at 16. The environmental organizations in *Summers* challenged Forest Service regulations in general and as they applied to a particular project (the Burnt Ridge project). *See Summers*, 555 U.S. at 490–91. The Supreme Court noted that the organizations would have established standing with respect to the Burnt Ridge project, but by the time the case reached the Supreme Court, the parties had settled their dispute over that project. *Id.* at 494. Thus, the only challenge remaining was a challenge to “the regulation in the abstract . . . , apart from any concrete application that threaten[ed] imminent harm to [the organizations’] interests.” *Id.* That procedural challenge in the abstract is the one that Plaintiffs here raise. And the Supreme Court was clear that plaintiffs lack standing to pursue such a challenge in the absence of concrete, imminent harm. *Id.* The Court observed that, to hold otherwise, “would fly in the face of Article III’s injury-in-fact requirement.” *Id.*

Causation and Redressability

For similar reasons, Plaintiffs have failed to establish causation or redressability. In light of the inherently speculative nature of Plaintiffs’ alleged harm, it is unknowable in advance whether that harm caused by possible future regulations would have any causal connection to EO 13990 or the Interim Estimates. The causal chain, supported by a number of bare assumptions, is too weak for standing.

It is true, as Plaintiffs assert, that, “Article III requires no more than *de facto* causality,” which may be satisfied by showing “the predictable effect of Government action on the decisions of third parties.” *Dep’t of Commerce*, 139 S. Ct. at 2566. But the actions of the third parties here are far from predictable.

In support of their argument otherwise, Plaintiffs rely heavily on *Bennett v. Spear*, 520 U.S. 154 (1997), in which the Supreme Court held that a group of ranchers and irrigation districts had standing to challenge a Fish and Wildlife Service biological opinion that had the effect of requiring minimum water levels in particular reservoirs. The government in that case conceded that, although the biological opinion purported to be “advisory,” the relevant “statutory scheme presuppose[d] that the biological opinion [would] play a central role in the action agency’s decisionmaking process,” such that the opinion “alter[ed] the legal regime to which the agency [was] subject” and had a “*virtually determinative effect*” on the agency’s resulting water level restrictions. *Id.* at 169-70 (emphasis added). In other words, the biological opinion prescribed a particular action (imposition of water level restrictions) which the agency was required to take or

face significant consequences, and that particular action posed imminent injury to petitioners in the form of reduced irrigation water. *See id.* at 170-71. The Supreme Court thus concluded the petitioners' injury was fairly traceable to the biological opinion. *Id.* at 171.

Unlike the biological opinion in *Bennett*, neither EO 13990 nor the Interim Estimates mandate agencies issue the particular regulations that Plaintiffs fear will harm them. As noted above, the mandate in EO 13990 on which Plaintiffs focus is limited to one of innumerable other factors in the cost-benefit analysis conducted by a wide range of agencies in an even wider range of regulatory contexts, and only to the extent consistent with applicable law. It is implausible to suggest that the Interim Estimates alters the legal regime to which agencies are subject.

Indeed, when asked at oral argument to explain how exactly the Interim Estimates would apply in future agency actions, Plaintiffs could not. Because they do not yet know. Neither does this Court. There is simply no way to predict how the Interim Estimates will affect an agency's analysis, if at all, without resorting to sheer speculation.

For similar reasons, Plaintiffs fail to demonstrate redressability. Redressability may be shown "where a favorable decision avoids, or at least delays, a regulatory burden." *City of Kennett*, 887 F.3d at 432 (citations omitted). Plaintiffs' requested relief in this case would do neither. Even if the Court were to declare the Interim Estimates non-binding, agencies would be free to—and may be required to, *see Center for Biological Diversity*, 538 F.3d at 1200—consider the social costs of greenhouse gas

emissions. And agencies may arrive at the same or even more costly regulations at the same speed or even more quickly than Plaintiffs currently predict.

In short, Plaintiffs are attempting to do what the Supreme Court cautioned against in *Lujan*, 497 U.S. 871. “Instead of attacking the separate [rules or regulations] allegedly causing them harm, [Plaintiffs] chose to challenge a more generalized level of Government action.” 504 U.S. at 568. “This programmatic approach has obvious practical advantages, but also obvious difficulties insofar as proof of causation or redressability is concerned” and is “rarely if ever appropriate for federal-court adjudication.” *Id.* Rather, a “case-by-case approach . . . [while] understandably frustrating” to Plaintiffs, “is the traditional, and remains the normal, mode of operation of the courts.” *Lujan v. Nat’l Wildlife Fed’n*, 497 U.S. 871, 894 (1990).

Relaxed Requirements for Procedural Injuries or for State Plaintiffs

Plaintiffs argue that the standing requirements are somewhat relaxed in this case for two reasons: (1) because they have suffered a “procedural injury” in that they have been denied the ability to file comments on the Interim Estimates, and (2) because states in general are “entitled to special solicitude in the Court’s standing analysis,” *Massachusetts v. EPA*, 549 U.S. 497, 520 (2007). Both arguments are without merit.

The Supreme Court has made clear that “deprivation of a procedural right without some concrete interest that is affected by the deprivation—a procedural right *in vacuo*—is insufficient to create Article III standing.” *Summers*, 555 U.S. at 496; *see also Spokeo*, 136 S. Ct. at 1549 (“[A plaintiff] could not, for example, allege a bare procedural

violation, divorced from any concrete harm, and satisfy the injury-in-fact requirement of Article III.”). Put simply, an allegation of “‘procedural’ standing to challenge the . . . failure to provide notice and an opportunity to submit comments pursuant to the APA” is destined to fail where “no imminent injury in fact has been alleged.” *Nat’l Ass’n of Home Builders v. E.P.A.*, 667 F.3d 6, 15–16 (D.C. Cir. 2011); *see also Summers*, 555 U.S. at 497 (“Unlike redressability, . . . the requirement of injury in fact is a hard floor of Article III jurisdiction that cannot be removed by statute.”). As explained above, Plaintiffs have not alleged imminent injury in fact. Therefore, they lack standing.

Neither are Article III’s requirements excused merely because a state sues in its sovereign capacity. In *Massachusetts v. EPA*, a group of states sued the EPA, alleging that the agency’s failure to regulate greenhouse gas emissions violated the Clean Air Act and caused them injury in the form of harm to their states’ environments. *Massachusetts*, 549 U.S. at 504. The Supreme Court held that because one of the plaintiff states, Massachusetts, “own[ed] a substantial portion of the state’s coastal property, . . . it ha[d] alleged a particularized injury in its capacity as a landowner.” *Id.* at 522. In so holding, the Court rejected the EPA’s argument that, because the harm from climate change is “widely shared,” it is the sort of “generalized harm” that is insufficient to establish Article III jurisdiction. *Id.* at 516-23. Rather, the Court held that “States are not normal litigants for the purposes of invoking federal jurisdiction,” because of their unique “desire to preserve [their] sovereign territory.” *Id.* at 518-19. As such, the Court accorded Massachusetts “special solicitude in [the] standing analysis.” *Id.* at 520.

“Lower courts have lamented the ‘lack of guidance on how they are to apply the special solicitude doctrine to standing questions.’”¹³ *California v. Trump*, No. CV 19-960 (RDM), 2020 WL 1643858, at *6 (D.D.C. Apr. 2, 2020) (quoting *Wyoming v. U.S. Dep’t of Interior*, 674 F.3d 1220, 1238 (10th Cir. 2012)). But whatever the exact meaning, it is at least clear that “[t]his special solicitude does *not* eliminate the state petitioner’s obligation to establish a concrete injury.” *Wyoming*, 674 F.3d at 1238 (emphasis in original).

Massachusetts established such a concrete and particularized injury to its coastal property. *See Massachusetts*, 549 U.S. at 522. Plaintiffs here have not. Their injuries are merely speculative, which is insufficient for standing. *See California*, 2020 WL 1643858, at *7 (“[T]he special-solitude and procedural-injury doctrines do not—and cannot—alter the irreducible constitutional minimum of standing reflected in the elements of injury in fact, causation, and redressability.”).

¹³ The Fifth Circuit recently described the doctrine as having “two requirements: (1) the State must have a procedural right to challenge the action in question, and (2) the challenged action must affect one of the State’s quasi-sovereign interests.” *State v. Biden*, No. 21-10806, 2021 WL 3674780, at *5 (5th Cir. Aug. 19, 2021). Like the Supreme Court in *Massachusetts v. EPA*, the Fifth Circuit in *Biden* found that at least one state litigant (Texas) had shown actual and imminent injuries that directly flowed from—and could be redressed by enjoining—the agency’s immigration-related action in that case. 2021 WL 3674780, at *4. But to “remove any lingering doubt” as to redressability, the Fifth Circuit noted that the special solicitude doctrine made this prong of standing “easier to establish for certain state litigants than for other litigants.” 2021 WL 3674780, at *6. Here, even giving Plaintiffs the benefit of doubt that the solicitude doctrine may afford, Plaintiffs cannot establish redressability or any of the other Article III requirements.

Ripeness

Besides standing, Plaintiffs face another, closely related jurisdictional barrier. Their claims are not ripe. “Ripeness is a justiciability doctrine designed to prevent the courts, through avoidance of premature adjudication, from entangling themselves in abstract disagreements over administrative policies, and also to protect the agencies from judicial interference until an administrative decision has been formalized and its effects felt in a concrete way by the challenging parties.” *Nat’l Park Hosp. Ass’n v. Dep’t of Interior*, 538 U.S. 803, 807–08, (2003). “The touchstone of a ripeness inquiry is whether the harm asserted has matured enough to warrant judicial intervention.” *Parrish v. Dayton*, 761 F.3d 873, 875 (8th Cir. 2014) (citation omitted). The doctrine “is drawn both from Article III limitations on judicial power and from prudential reasons for refusing to exercise jurisdiction.” *Nat’l Park Hosp. Ass’n*, 538 U.S. at 808.

“Determining whether administrative action is ripe for judicial review requires us to evaluate (1) the fitness of the issues for judicial decision and (2) the hardship to the parties of withholding court consideration.” *Id.* “Both of these factors are weighed on a sliding scale, but each must be satisfied to at least a minimal degree.” *City of Kennett*, 887 F.3d at 432. “Absent a statutory provision providing for immediate judicial review, a regulation is not ordinarily considered the type of agency action ‘ripe’ for judicial review under the . . . APA . . . until the scope of the controversy has been reduced to more manageable proportions, and its factual components fleshed out, by some concrete action

applying the regulation to the claimant’s situation in a fashion that harms or threatens to harm him.” *Nat’l Park Hosp. Ass’n*, 538 U.S. at 808.

Plaintiffs’ claims are not ripe for judicial review because any impact of EO 13990 and the Interim Estimates cannot “be said to be felt immediately” by Plaintiffs (if at all) “in conducting their day-to-day affairs,” and because “no irremediably adverse consequences flow[] from requiring a later challenge.” *See id.* at 810 (citation omitted); *see also State v. Yellen*, No. 4:21CV376 HEA, 2021 WL 1889867, at *5 (E.D. Mo. May 11, 2021) (dismissing Missouri’s challenge to the American Rescue Plan Act on both standing and ripeness grounds where “Missouri asked the Court to determine the scope of the ARPA’s Offset Restriction well in advance of any adverse effect and in a wholly, non-actionable hypothetical context”).

In *Ohio Forestry Association, Inc. v. Sierra Club*, 523 U.S. 72 (1998), the Supreme Court held that a challenge to a Forest Service plan alleging excess logging was not ripe for judicial review because “[a]lthough the Plan set[] logging goals, select[ed] the areas of the forest that [were] suited to timber production, . . . and determine[d] which probable methods of timber harvest [were] appropriate, . . . it [did] not itself authorize the cutting of any trees.” 523 U.S. at 729. Before the logging could take place, the Forest Service had to “(a) propose a specific area in which logging will take place and the harvesting methods to be used . . . ; (b) ensure that the project is consistent with the Plan . . . ; (c) provide those affected by proposed logging notice and an opportunity to be heard . . . ; (d) conduct an environmental analysis . . . ; and (e) subsequently make a

final decision to permit logging, which affected persons may challenge in an administrative appeals process and in court” *Id.* at 729-30.

Likewise here, there is “considerable legal distance” between the adoption of the Interim Estimates and the moment—if one occurs—when a harmful regulation is issued. *See id.* at 730. Withholding the Court’s consideration at present will not cause Plaintiffs significant hardship. The time or expense of having to pursue numerous challenges to each allegedly harmful regulation, rather than cutting the regulatory process off prematurely, is not the type of harm sufficient to justify immediate review. *See id.* at 734-35 (holding that the fact that it would “be easier, and certainly cheaper, to mount one legal challenge against the Plan now, than to pursue many challenges to each site-specific logging decision to which the Plan might eventually lead [is not] . . . sufficient by itself to justify review in a case that would otherwise be unripe”).

The Court does not mean to disregard Plaintiffs’ fears of future economic harm. But Plaintiffs will have ample opportunity to bring legal challenges to particular regulations if those regulations pose imminent, concrete, and particularized injury. For example, in *Zero Zone, Inc. v. United States Department of Energy*, the Seventh Circuit considered a challenge to a Department of Energy (DOE) regulation of the type Plaintiffs here fear—namely, a rule establishing new energy efficiency standards for commercial refrigeration equipment. That rule was developed after the agency conducted a cost-benefit analysis that considered, among other factors, “an estimate of the monetized

damages associated with an incremental increase in carbon emissions in a given year, known as the Social Cost of Carbon (‘SCC’).” 832 F.3d 654, 677 (7th Cir. 2016).

The petitioners contended that the relevant statutory authority did not permit the DOE to consider environmental factors and that the DOE’s analysis of the SCC was itself arbitrary and capricious. *Id.* at 677. Like the Plaintiffs here, the petitioners contended that the calculation of the SCC was “irredeemably flawed” for a number of reasons and that the DOE acted arbitrarily by accounting for indirect global benefits to the environment while ignoring indirect costs such as the effects on displaced workers. *Id.* at 678. The Seventh Circuit considered the petitioners’ arguments and held that the DOE adequately responded to the petitioners’ concerns during its notice-and-comment period and that the DOE’s analysis was not arbitrary or capricious. *Id.*

In other words, the petitioners in *Zero Zone*, like many others with similar concerns,¹⁴ had a full and fair opportunity to address their objections to the SCC through the normal review process under the APA—first, before the agency itself and later, through judicial review. So, too, would Plaintiffs here.¹⁵ Plaintiffs’ speculation that their

¹⁴ Indeed, as Defendants note, several courts have considered challenges to specific agency actions on the theory that an agency inappropriately accounted for the social costs of greenhouse gases. *See, e.g., Ctr. for Biological Diversity*, 538 F.3d at 1203; *Wyoming v. Dep’t of the Interior*, 493 F. Supp. 3d 1046, 1080 (D. Wyo. 2020).

¹⁵ Plaintiffs suggest—cautiously, so as not to foreclose anticipated future lawsuits—that the Supreme Court’s decision in *Dep’t of Homeland Sec. v. Regents of the Univ. of Cal.*, 140 S. Ct. 1891, 1910 (2020) “cast doubt” on the notion that Plaintiffs could challenge the Interim Estimates as part of a later complaint regarding agency action. *See* ECF No. 35 at 10. *Regents* involved a challenge to the Department of Homeland Security’s (DHS) rescission of the Deferred Action for Childhood Arrivals (DACA)

objections will be “disregarded” or “receive no meaningful consideration” (ECF No. 35, at 9, 11) is just that; it is not supported by well-pled facts.

In fact, the evidence suggests the opposite. In their motion for a preliminary injunction, Plaintiffs describe a recent proceeding before the Federal Energy Regulatory Commission (FERC), in which FERC “request[ed] comments on whether ‘the [Natural Gas Act], [National Environmental Policy Act], or other federal statute[s] authorize[d] or mandate[d] the use of Social Cost of Carbon (SCC) analysis by [FERC] in its consideration of certificate applications.’” ECF No. 18 at 35 (quoting Notice of Inquiry, Certification of New Interstate Natural Gas Facilities, 86 Fed. Reg. 11,268-72 (Feb. 24, 2021)). FERC also “ask[ed] for comment on how the SCC could be ‘used to determine whether a proposed project is required by public convenience and necessity,’ because that is the statutory language that Congress requires FERC to meet when certifying a new pipeline.” *Id.* at 26.

program. 140 S. Ct. at 1891. In rescinding DACA, DHS acted on the Attorney General’s advice. *Id.* The Court noted that the Immigration and Nationality Act (INA) bound DHS to the Attorney General’s legal conclusions and, therefore, raised the question of whether a suit challenging DHS’s decision was the “proper vehicle” for attacking the Attorney General’s underlying legal conclusions. *Id.* at 1910. But because the parties had not addressed that question in their briefs, the Court did not resolve it. *Id.* In other words, *Regents* did not involve an executive order at all, raised a question involving a unique provision of the INA not relevant here, and, in any event, did not answer the question. *Regents* is thus inapposite. Plaintiffs have not cited, and the Court has not found, any legal authority that would preclude Plaintiffs from challenging the Interim Estimates as part of a later challenge to agency action. To the contrary, such claims are regularly heard by federal courts. *E.g., Zero Zone*, 832 F.3d at 677.

Plaintiffs state that they “took advantage of this process and commented.”¹⁶ *Id.* at 35 n.7; *see also* ECF No. 35 at 16 n.1 (noting that their comments “explain[ed] that the Interim Values are arbitrary, outdated, and the process lacks transparency”). Plaintiffs have not suggested that FERC disregarded their comments. But if that happens, and if FERC then takes some action that harms Plaintiffs in a concrete and particularized way, Plaintiffs may seek relief in the appropriate court, after exhausting any applicable administrative remedies and complying with any applicable statutory authority.¹⁷ *See, e.g.*, 15 U.S.C. § 717r(b) (setting forth the procedures for seeking review of FERC orders under the Natural Gas Act); *N.J. Conservation Found. v. Fed. Energy Regul. Comm’n*, 353 F. Supp. 3d 289, 295 (D.N.J. 2018) (“[T]he courts of appeals have exclusive jurisdiction to review all matters inhering in natural gas pipelines certificate proceedings before FERC.”).

In short, the Court agrees with Defendants’ assessment:

A court’s determination of the legality of an agency’s reliance on the Interim Estimates will necessarily be informed by the specific statutory directives that Congress has provided to guide the agency’s actions. The Court cannot meaningfully engage with Plaintiffs’ arguments *en masse*, divorced from the context of particular agencies operating under specific statutory delegations of authority.

¹⁶ At oral argument, Plaintiffs also described a newly proposed EPA rule regarding emissions standards for light duty vehicles that allegedly relies on the Interim Estimates. Plaintiffs stated that they intended to participate in the notice-and-comment proceedings with respect to this rule and, if appropriate, seek judicial relief in the proper forum.

¹⁷ As Defendants correctly note, the fact that governing statutes may vest jurisdiction to challenge particular regulations or orders exclusively in certain courts, such as the federal courts of appeal, makes premature review by this Court particularly inappropriate.

ECF No. 28 at 50. That is to say, “further factual development would significantly advance [the court’s] ability to deal with the legal issues presented and would aid . . . in their resolution.” *Ohio Forestry Ass’n*, 523 U.S. at 737.

For all of these reasons, the Court will grant Defendants’ motion to dismiss for lack of subject matter jurisdiction. Doing so properly responds to the separation-of-powers concerns raised by Plaintiffs by respecting the limits of judicial power.

Remaining Motions and Arguments

Because the Court lacks jurisdiction, it must dismiss this lawsuit without prejudice and without reaching the merits of Plaintiffs’ claims or Plaintiffs’ motion for preliminary injunction.


CONCLUSION

Accordingly,

IT IS HEREBY ORDERED that Defendants’ motion to dismiss for lack of subject matter jurisdiction is **GRANTED**. ECF No. 27.

IT IS FURTHER ORDERED that Plaintiffs’ motion for a preliminary injunction is **DISMISSED as moot**. ECF No. 17.

A separate Order of Dismissal will accompany this Memorandum and Order.


AUDREY G. FLEISSIG
UNITED STATES DISTRICT JUDGE

Dated this 31st day of August, 2021.