115TH CONGRESS
1ST SESSION

S. _____

To establish a cost of greenhouse gases for carbon dioxide, methane, and nitrous oxide to be used by Federal agencies, and for other purposes.

IN THE SENATE OF THE UNITED STATES

Mr. BENNET (for himself, Mrs. FEINSTEIN, Ms. HARRIS, Mr. WYDEN, Mr. WHITEHOUSE, Ms. HASSAN, Mr. CARDIN, Mr. MERKLEY, Mrs. MURRAY, Mr. VAN HOLLEN, and Ms. WARREN) introduced the following bill; which was read twice and referred to the Committee on _____

A BILL

To establish a cost of greenhouse gases for carbon dioxide, methane, and nitrous oxide to be used by Federal agencies, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Pollution Transparency Act".

SEC. 2. FINDINGS.

Congress finds that—

(1) sound economic and policy analyses require that the economic benefits of reducing climate

change be considered together with the costs of policies and measures to reduce greenhouse gas emissions;

(2) climate change, if not addressed, is projected to inflict substantial damage on the economy and people of the United States;

(3) according to the Congressional Budget Office, the Government Accountability Office, and the Office of Management and Budget, the impacts of climate change are—

(A) costing United States taxpayers billions of dollars annually; and

(B) putting pressure on the Federal budget;

(4) the expenditures by the Federal Government resulting from the effects of climate change are projected to increase, and reducing greenhouse gas emissions presents an opportunity to minimize those expenditures;

(5) between calendar years 2008 and 2015, the United States reduced carbon pollution from the energy sector by nearly 10 percent, while the economy grew more than 10 percent;

(6) more than 1,200 companies are taking the cost of climate change into consideration in business decisions;

(7) estimates of the costs of greenhouse gases provide a method and measure, grounded in scientific and economic research, for monetizing—

(A) the costs of greenhouse gas emissions; and

(B) the benefits of reducing greenhouse gas emissions;

(8) the National Academies of Sciences, Engineering, and Medicine has provided detailed recommendations for improving the estimate of the costs of greenhouse gases for the purpose of regulatory analysis;

(9) the reduction of greenhouse gas emissions by other countries benefits the United States by reducing climate risks to the United States, and the reduction of greenhouse gas emissions by the United States benefits other countries;

(10) in light of the global nature of the problem of greenhouse gas emissions, the interests of the United States would be maximized if the United States were to use a calculation method of the cost of climate pollution that reflects global damages;

(11) due to the nature of climate change risks, the returns on mitigation may pay off in periods that would otherwise involve substantial losses;

(12) economic theory and evidence suggests that, for actions with intergenerational consequences such as the consequences of climate change, a discount rate approximately equal to or less than the long-term yield on the debt of the Treasury of the United States may be appropriate; and

(13) it is imperative that the academic community continue research on the cost of greenhouse gases.

SEC. 3. DEFINITIONS.

In this Act:

(1) CALCULATION METHOD.—The term "calculation method" means the method by which the costs of greenhouse gases are calculated in accordance with subsections (a), (b), and (c) of section 4, respectively.

(2) COMMITTEE.—The term "Committee" means the Costs of Greenhouse Gases Scientific Review Committee established under section 7(a).

(3) COSTS OF GREENHOUSE GASES.—

(A) IN GENERAL.—The term "costs of greenhouse gases" means the monetized present

discounted values, in dollars, of the current and future net costs to society that result from—

(i) 1 ton of emissions of a specific greenhouse gas in a specific year, including damage relating to—

(I) a change in net agricultural productivity;

(II) energy use;

(III) human health;

(IV) property damage from increased flood risk and sea level rise; and

(V) to the maximum extent practicable, the value of the effect on ecosystem services due to climate change; and

(ii) the monetized present discounted values of the current and future net benefits to society from a 1-ton reduction of emissions of a specific greenhouse gas in a specific year, including a reduction in any damage described in clause (i).

(B) INCLUSIONS.—The term ''costs of greenhouse gases'' includes—

(i) the cost of carbon dioxide;

(ii) the cost of methane;

(iii) the cost of nitrous oxide; and

(iv) the cost of any other greenhouse gas estimated by the Working Group.

(4) WORKING GROUP.—The term "Working Group" means the Interagency Working Group on the Costs of Greenhouse Gases established under section 5(a).

SEC. 4. COST OF CARBON DIOXIDE, COST OF METHANE, AND COST OF NITROUS OXIDE.

(a) COST OF CARBON DIOXIDE.—In developing any rulemaking that requires a regulatory impact analysis, making any substantial procurement decision for which the cost of carbon dioxide is not applied before the date on which a revised version of the costs of greenhouse gases is finalized, the head of any Federal agency shall consider and document the cost of carbon dioxide in accordance with the amounts specified in the following table:

Cost of Carbon Dioxide, 2010 Through 2050 (in 2007 Dollars per Metric Ton of Carbon Dioxide), Discount Rate and Statistic

Year	5 Percent Average	3 Percent Average	2.5 Percent Average	High Impact (95th Percentile at 3 Percent Discount Rate)
2010	$10	$31	$50	$86
2011	$11	$32	$51	$90

Cost of Carbon Dioxide, 2010 Through 2050 (in 2007 Dollars per Metric Ton of Carbon Dioxide), Discount Rate and Statistic—Continued

Year	5 Percent Average	3 Percent Average	2.5 Percent Average	High Impact (95th Percentile at 3 Percent Discount Rate)
2012	$11	$33	$53	$93
2013	$11	$34	$54	$97
2014	$11	$35	$55	$101
2015	$11	$36	$56	$105
2016	$11	$38	$57	$108
2017	$11	$39	$59	$112
2018	$12	$40	$60	$116
2019	$12	$41	$61	$120
2020	$12	$42	$62	$123
2021	$12	$42	$63	$126
2022	$13	$43	$64	$129
2023	$13	$44	$65	$132
2024	$13	$45	$66	$135
2025	$14	$46	$68	$138
2026	$14	$47	$69	$141
2027	$15	$48	$70	$143
2028	$15	$49	$71	$146
2029	$15	$49	$72	$149
2030	$16	$50	$73	$152
2031	$16	$51	$74	$155
2032	$17	$52	$75	$158
2033	$17	$53	$76	$161
2034	$18	$54	$77	$164

Cost of Carbon Dioxide, 2010 Through 2050 (in 2007 Dollars per Metric Ton of Carbon Dioxide), Discount Rate and Statistic—Continued

Year	5 Percent Average	3 Percent Average	2.5 Percent Average	High Impact (95th Percentile at 3 Percent Discount Rate)
2035	$18	$55	$78	$168
2036	$19	$56	$79	$171
2037	$19	$57	$81	$174
2038	$20	$58	$82	$177
2039	$20	$59	$83	$180
2040	$21	$60	$84	$183
2041	$21	$61	$85	$186
2042	$22	$61	$86	$189
2043	$22	$62	$87	$192
2044	$23	$63	$88	$194
2045	$23	$64	$89	$197
2046	$24	$65	$90	$200
2047	$24	$66	$92	$203
2048	$25	$67	$93	$206
2049	$25	$68	$94	$209
2050	$26	$69	$95	$212

1 (b) COST OF METHANE.—In developing any rule-
2 making that requires a regulatory impact analysis, making
3 any substantial procurement decision for which the cost
4 of methane is not applied before the date on which a re-
5 vised version of the costs of greenhouse gases is finalized,
6 the head of any Federal agency shall consider and docu-

1 ment the cost of methane in accordance with the amounts

2 specified in the following table:

Cost of Methane, 2010 Through 2050 (in 2007 Dollars per Metric Ton of Methane), Discount Rate and Statistic

Year	5 Percent Average	3 Percent Average	2.5 Percent Average	High Impact (95th Percentile at 3 Percent Discount Rate)
2010	$370	$870	$1,200	$2,400
2011	$380	$910	$1,200	$2,500
2012	$400	$940	$1,300	$2,600
2013	$420	$970	$1,300	$2,700
2014	$440	$1,000	$1,300	$2,700
2015	$450	$1,000	$1,400	$2,800
2016	$470	$1,100	$1,400	$2,900
2017	$490	$1,100	$1,500	$3,000
2018	$510	$1,100	$1,500	$3,000
2019	$520	$1,200	$1,500	$3,100
2020	$540	$1,200	$1,600	$3,200
2021	$560	$1,200	$1,600	$3,300
2022	$590	$1,300	$1,700	$3,400
2023	$610	$1,300	$1,700	$3,500
2024	$630	$1,400	$1,800	$3,600
2025	$650	$1,400	$1,800	$3,700
2026	$670	$1,400	$1,900	$3,800
2027	$700	$1,500	$1,900	$3,900
2028	$720	$1,500	$2,000	$4,000
2029	$740	$1,600	$2,000	$4,100

Cost of Methane, 2010 Through 2050 (in 2007 Dollars per Metric Ton of Methane), Discount Rate and Statistic—Continued

Year	5 Percent Average	3 Percent Average	2.5 Percent Average	High Impact (95th Percentile at 3 Percent Discount Rate)
2030	$760	$1,600	$2,000	$4,200
2031	$790	$1,600	$2,100	$4,300
2032	$820	$1,700	$2,100	$4,500
2033	$850	$1,700	$2,200	$4,600
2034	$880	$1,800	$2,200	$4,700
2035	$900	$1,800	$2,300	$4,900
2036	$930	$1,900	$2,400	$5,000
2037	$960	$1,900	$2,400	$5,100
2038	$990	$2,000	$2,500	$5,200
2039	$1,000	$2,000	$2,500	$5,400
2040	$1,000	$2,000	$2,600	$5,500
2041	$1,100	$2,100	$2,600	$5,600
2042	$1,100	$2,100	$2,700	$5,700
2043	$1,100	$2,200	$2,700	$5,800
2044	$1,200	$2,200	$2,800	$5,900
2045	$1,200	$2,300	$2,800	$6,100
2046	$1,200	$2,300	$2,900	$6,200
2047	$1,300	$2,400	$2,900	$6,300
2048	$1,300	$2,400	$3,000	$6,400
2049	$1,300	$2,500	$3,000	$6,500
2050	$1,300	$2,500	$3,100	$6,700

1 (c) COST OF NITROUS OXIDE.—In developing any
2 rulemaking that requires a regulatory impact analysis,
3 making any substantial procurement decision for which
4 the cost of nitrous oxide is not applied before the date
5 on which a revised version of the costs of greenhouse gases
6 is finalized, the head of any Federal agency shall consider
7 and document the cost of nitrous oxide in accordance with
8 the amounts specified in the following table:

Cost of Nitrous Oxide, 2010 Through 2050 (in 2007 Dollars per Metric Ton of Nitrous Oxide), Discount Rate and Statistic

Year	5 Percent Average	3 Percent Average	2.5 Percent Average	High Impact (95th Percentile at 3 Percent Discount Rate)
2010	$3,400	$12,000	$18,000	$31,000
2011	$3,500	$12,000	$18,000	$32,000
2012	$3,700	$12,000	$19,000	$33,000
2013	$3,800	$13,000	$19,000	$34,000
2014	$3,900	$13,000	$20,000	$34,000
2015	$4,000	$13,000	$20,000	$35,000
2016	$4,200	$14,000	$20,000	$36,000
2017	$4,300	$14,000	$21,000	$37,000
2018	$4,400	$14,000	$21,000	$38,000
2019	$4,600	$15,000	$22,000	$38,000
2020	$4,700	$15,000	$22,000	$39,000
2021	$4,900	$15,000	$23,000	$40,000
2022	$5,000	$16,000	$23,000	$41,000
2023	$5,200	$16,000	$23,000	$42,000

Cost of Nitrous Oxide, 2010 Through 2050 (in 2007 Dollars per Metric Ton of Nitrous Oxide), Discount Rate and Statistic—Continued

Year	5 Percent Average	3 Percent Average	2.5 Percent Average	High Impact (95th Percentile at 3 Percent Discount Rate)
2024	$5,400	$16,000	$24,000	$43,000
2025	$5,500	$17,000	$24,000	$44,000
2026	$5,700	$17,000	$25,000	$45,000
2027	$5,900	$17,000	$25,000	$46,000
2028	$6,000	$18,000	$26,000	$47,000
2029	$6,200	$18,000	$26,000	$48,000
2030	$6,300	$19,000	$27,000	$49,000
2031	$6,500	$19,000	$27,000	$50,000
2032	$6,800	$19,000	$28,000	$51,000
2033	$7,000	$20,000	$28,000	$52,000
2034	$7,200	$20,000	$29,000	$54,000
2035	$7,400	$21,000	$29,000	$55,000
2036	$7,600	$21,000	$30,000	$56,000
2037	$7,800	$21,000	$30,000	$57,000
2038	$8,000	$22,000	$31,000	$58,000
2039	$8,200	$22,000	$31,000	$59,000
2040	$8,400	$23,000	$32,000	$60,000
2041	$8,600	$23,000	$32,000	$61,000
2042	$8,800	$23,000	$33,000	$62,000
2043	$9,100	$24,000	$33,000	$64,000
2044	$9,300	$24,000	$34,000	$65,000
2045	$9,500	$25,000	$34,000	$66,000
2046	$9,800	$25,000	$35,000	$67,000

Cost of Nitrous Oxide, 2010 Through 2050 (in 2007 Dollars per Metric Ton of Nitrous Oxide), Discount Rate and Statistic—Continued

Year	5 Percent Average	3 Percent Average	2.5 Percent Average	High Impact (95th Percentile at 3 Percent Discount Rate)
2047	$10,000	$26,000	$35,000	$68,000
2048	$10,000	$26,000	$36,000	$69,000
2049	$10,000	$26,000	$36,000	$71,000
2050	$11,000	$27,000	$37,000	$72,000

1 **SEC. 5. INTERAGENCY WORKING GROUP ON THE COSTS OF**
2 **GREENHOUSE GASES.**

3 (a) ESTABLISHMENT.—The Director of the Office of
4 Management and Budget, the Director of the Office of
5 Science and Technology Policy, and the Chair of the Coun-
6 cil of Economic Advisers shall establish an interagency
7 working group, to be known as the "Interagency Working
8 Group on the Costs of Greenhouse Gases" to carry out
9 the calculation method revision evaluation described in
10 section 6.

11 (b) MEMBERSHIP.—The Working Group shall consist
12 of members from—

13 (1) the Council of Economic Advisers;
14 (2) the Office of Science and Technology Policy;
15 (3) the National Security Council;
16 (4) the National Economic Council;

(5) the Council on Environmental Quality;

(6) the Department of Agriculture;

(7) the Department of Commerce;

(8) the Department of Energy;

(9) the Department of the Interior;

(10) the Department of Transportation;

(11) the Department of the Treasury;

(12) the Department of Health and Human Services; and

(13) the Environmental Protection Agency.

SEC. 6. CALCULATION METHOD REVISION.

(a) REVISION EVALUATION.—

(1) IN GENERAL.—Not later than 5 years after the date of enactment of this Act, and not less frequently than once every 5 years thereafter, the Working Group shall carry out a revision evaluation for the cost of carbon dioxide, cost of methane, and cost of nitrous oxide to determine whether a revision of the calculation method of the cost of carbon dioxide, cost of methane, or cost of nitrous oxide is necessary.

(2) CONSIDERATIONS.—In carrying out a revision evaluation under paragraph (1) or a revision under subsection (b), the Working Group shall—

(A) consider—

(i) the findings of the National Academies of Sciences, Engineering, and Medicine relating to approaches to estimating the costs of greenhouse gases;

(ii) the findings of the Committee under section 7(a)(3);

(iii) advancements in scientific and economic research relating to the impacts of climate change and the estimation of the costs of greenhouse gases;

(iv) new domestic and international findings; and

(v) all harm caused by greenhouse gas emissions;

(B) assess any proposed revision of the calculation method with respect to—

(i) consistency with the state of scientific knowledge, as reflected by current, peer-reviewed literature; and

(ii) the adequacy with which the proposed calculation method identifies and represents key uncertainties and sensitivities;

(C) evaluate the harm caused by greenhouse gas emissions for the period beginning on

the date on which the applicable revision evaluation commences and ending on a date in the future that would allow estimation of the vast majority of discounted climate damages;

(D) apply 1 or more discount rates, which shall—

(i) account for the intergenerational nature of the harm caused by climate change; and

(ii) be consistent with the interest rate of consumption used by Federal agencies to reflect climate risk;

(E) include values that account for global damages from greenhouse gas emissions;

(F) document the calculation method and present results in a manner adequate for the scientific community to understand and assess the calculation method; and

(G) make available to researchers the model code for review, use, and modification.

(b) REVISION.—

(1) CALCULATION METHOD.—If the Working Group makes a determination under subsection (a)(1) that revision of the calculation method is nec-

essary, the Working Group shall draft a proposed revision of the calculation method.

(2) PUBLIC NOTIFICATION AND COMMENT PERIOD.—Any proposed revision of the calculation method shall be published in the Federal Register for a period of public comment of not fewer than 90 days and include consultation with industry groups.

(3) EFFECT OF REVISIONS BY WORKING GROUP.—Any revised calculation method of the cost of carbon dioxide, the cost of methane, or the cost of nitrous oxide developed by the Working Group under paragraph (1) and published under paragraph (2) shall supersede the applicable discount rate value of the cost of carbon dioxide, the cost of methane, or the cost of nitrous oxide under section 4.

SEC. 7. COSTS OF GREENHOUSE GASES SCIENTIFIC REVIEW COMMITTEE.

(a) ESTABLISHMENT.—

(1) IN GENERAL.—Not later than January 1, 2019, and not less frequently than once every 5 years thereafter, the Director of the Office of Management and Budget, in consultation with the Director of the Office of Science and Technology Policy and the Chair of the Council of Economic Advisers, shall establish a committee, to be known as the

"Costs of Greenhouse Gases Scientific Review Committee".

(2) MEMBERSHIP.—The membership of the Committee shall consist of not fewer than 10 members, selected by the presidents of the National Academies of Sciences, Engineering, and Medicine, who shall represent scientific fields relevant to the estimation of the costs of greenhouse gases, including—

(A) climate science;

(B) climate economics; and

(C) decision analysis.

(3) DUTIES.—The Committee shall publish a report in which the Committee shall—

(A) make a recommendation to the Working Group regarding whether a revision of the calculation method is necessary;

(B) if the Committee determines that a revision is necessary, recommend scientific data and models to be used by the Working Group in the revision of the calculation method;

(C) provide scientific advice to the Working Group on the revision; and

(D) provide guidance to the U.S. Global Change Research Program with respect to the

research necessary to advance the estimation of the costs of greenhouse gases.

(b) TERMINATION.—On the completion of the revision evaluation for which the Committee is established, the Committee shall terminate.

(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary of Commerce such sums as are necessary to administer the Committee.