DATE: July 12, 2021

AGENDA ITEM # 2

TO: Environmental Commission

FROM: Emiko Ancheta, Staff Liaison

SUBJECT: Carbon Dividend Trust Fund Legislation H.R. 2307

RECOMMENDATION:

Receive presentation form Citizens' Climate Lobby (CCL) on H.R. 2307 (Energy Innovation and Carbon Dividend Act)

BACKGROUND

The Carbon Dividend Trust Fund Legislation H.R. 2307 bill imposes a fee on the carbon content of fuels, including crude oil, natural gas, coal, or any other product derived from those fuels that will be used so as to emit greenhouse gases into the atmosphere. The fee is imposed on the producers or importers of the fuels and is equal to the greenhouse gas content of the fuel multiplied by the carbon fee rate. The rate would begin at a specified amount and increase each year, in addition it would be subject to further adjustments that would be based on progress of meeting a specified emission reduction target. The bill also includes a fee on fluorinated greenhouse gases.

According to the Congress Gov website, the bill includes specific exemptions, for example:

- fuels used for agricultural or non-emitting purposes
- fuels used by the Armed Forces
- rebates for facilities that capture and sequester carbon dioxide
- border adjustment provisions that require certain fees or refunds for carbon-intensive products that are exported or imported.

DISCUSSION

Receive presentation from the Citizens' Climate Lobby on H.R. 2307 (Energy Innovation and Carbon Dividend Act) and review and discuss information.

Attachments:

A. H.R. 2307 Bill Text
B. CCL Household Impact
C. Columbia Study: A Comparison of the Bipartisan Energy Innovation and Carbon Dividend Act with Other Carbon Tax Proposals
D. Resolution 2016-34
E. Draft Resolution 2021

I

117TH CONGRESS
1ST SESSION

H. R. 2307

To create a Carbon Dividend Trust Fund for the American people in order to encourage market-driven innovation of clean energy technologies and market efficiencies which will reduce harmful pollution and leave a healthier, more stable, and more prosperous Nation for future genera- tions.

IN THE HOUSE OF REPRESENTATIVES

APRIL 1, 2021

Mr. DEUTCH (for himself, Mr. MALINOWSKI, Ms. ESHOO, Ms. SCHAKOWSKY,Mr. CRIST, Mr. KILMER, Mr. PETERS, Ms. CHU, Mr. CONNOLLY, Ms. CRAIG, Mr. MORELLE, Mr. CARBAJAL, Mr. RASKIN, Mr. SIRES, Mr. SHERMAN, Mr. CROW, Mr. CORREA, Ms. SCANLON, Mr. JOHNSON of Georgia, Ms. PINGREE, Mr. MOULTON, Ms. ROYBAL-ALLARD, Mr. GARAMENDI, Mr. EVANS, Mr. PHILLIPS, Ms. MENG, Mr. CÁRDENAS, Ms. LEE of California, and Mr. CARTWRIGHT) introduced the following bill; which was referred to the Committee on Ways and Means, and in addi-tion to the Committees on Energy and Commerce, and Foreign Affairs, for a period to be subsequently determined by the Speaker, in each casefor consideration of such provisions as fall within the jurisdiction of the committee concerned

---

A BILL

To create a Carbon Dividend Trust Fund for the American people in order to encourage market-driven innovation of clean energy technologies and market efficiencies which will reduce harmful pollution and leave a healthier, more stable, and more prosperous Nation for future generations.

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 ''Energy Innovation and Carbon Dividend Act of 2021''.

SEC. 2. FINDINGS.

The Congress finds that—

(1) efficient markets strengthen our economy and benefit our Nation by encouraging competition, innovation, and technological progress;

(2) efficient markets should reflect all costs of goods to ensure that they advance America's prosperity and national interests;

(3) emissions of carbon pollution and other harmful pollutants into our Nation's air impose substantial costs on all Americans and on future generations; and

(4) creation of a Carbon Dividend Trust Fund, to be distributed to the American people, will make markets more efficient, create jobs, and stimulate competition, innovation, and technological progress that benefit all Americans and future generations.

SEC. 3. CARBON DIVIDENDS AND CARBON FEE.

The Internal Revenue Code of 1986 is amended by adding at the end the following new subtitle:

"Subtitle L—CARBON DIVIDENDS AND CARBON FEE

"CHAPTER 101—CARBON FEES

"SEC. 9901. DEFINITIONS.

"For purposes of this subtitle:

"(a) ADMINISTRATOR.—The term 'Administrator' means the Administrator of the Environmental Protection Agency.

"(b) CARBON DIOXIDE EQUIVALENT OR CO_2-e.—The term 'carbon dioxide equivalent' or 'CO_2-e' means the number of metric tons of carbon dioxide emissions with the same global warming potential as one metric ton of another greenhouse gas.

"(c) CARBON-INTENSIVE PRODUCT.—The term 'carbon-intensive product' means, as identified by the Secretary by rule—

"(1) for purposes of this chapter—

"(A) any manufactured or agricultural product which the Secretary in consultation with the Administrator determines is emissions-

intensive and trade-exposed, except that no covered fuel is a carbon-intensive product, and

''(B) until such time that the Secretary promulgates rules identifying carbon-intensive products, the following shall be considered carbon-intensive products: iron, steel, steel mill products (including pipe and tube), aluminum, cement, glass (including flat, container, and specialty glass and fiberglass), pulp, paper, chemicals, or industrial ceramics, and

''(2) for purposes of chapter 102, any economic sector, or product from that sector, which the Secretary in consultation with the Administrator determines is prone to carbon leakage because it is emissions-intensive and trade-exposed, along with other pertinent criteria, except that no covered fuel is a carbon-intensive product.

''(d) CARBON LEAKAGE.—The term 'carbon leakage' means an increase of global greenhouse gas emissions which are substantially due to the relocation of greenhouse gas sources from the United States to jurisdictions which lack comparable controls upon greenhouse gas emissions.

''(e) COST OF CARBON OR CARBON COSTS.—The term 'cost of carbon' or 'carbon costs' means a national or sub-national government policy which explicitly places

a price on greenhouse gas pollution and shall be limited to either a tax on greenhouse gases or a system of cap-and-trade. The cost of carbon is expressed as the price per metric ton of CO_2-e.

''(f) COVERED ENTITY.—The term 'covered entity' means—

''(1) in the case of crude oil—

''(A) a refinery operating in the United States, and

''(B) any importer of any petroleum or petroleum product into the United States,

''(2) in the case of coal—

''(A) any coal mining operation in the United States, and

''(B) any importer of coal into the United States,

''(3) in the case of natural gas—

''(A) any entity entering pipeline quality natural gas into the natural gas transmission system, and

''(B) any importer of natural gas into the United States, and

''(4) any entity or class of entities which, as determined by the Secretary, is transporting, selling, or otherwise using a covered fuel in a manner which

emits a greenhouse gas to the atmosphere and which has not been covered by the carbon fee or the carbon border fee adjustment.

''(g) COVERED FUEL.—The term 'covered fuel' means crude oil, natural gas, coal, or any other product derived from crude oil, natural gas, or coal which shall be used so as to emit greenhouse gases to the atmosphere.

''(h) CRUDE OIL.—The term 'crude oil' means unrefined petroleum.

''(i) EXPORT.—The term 'export' means to transport a product from within the jurisdiction of the United States to persons outside the United States.

''(j) FOSSIL FUEL.—The term 'fossil fuel' means coal, coal products, petroleum, petroleum products, or natural gas.

''(k) FULL FUEL CYCLE GREENHOUSE GAS EMISSIONS.—The term 'full fuel cycle greenhouse gas emissions' means the greenhouse gas content of a covered fuel plus that covered fuel's upstream greenhouse gas emissions.

''(l) GLOBAL WARMING POTENTIAL.—The term 'global warming potential' means the ratio of the time-integrated radiative forcing from the instantaneous release of one kilogram of a trace substance relative to that of one kilogram of carbon dioxide.

''(m) GREENHOUSE GAS.—The term 'greenhouse gas' means carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and other gases as defined by rule of the Administrator.

''(n) GREENHOUSE GAS CONTENT.—The term 'greenhouse gas content' means the amount of greenhouse gases of a product or a fuel, expressed in metric tons of CO_2-e, which would be emitted to the atmosphere by the use of a covered fuel and shall include, nonexclusively, emissions of carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), and other greenhouse gases as identified by rule of the Administrator.

''(o) GREENHOUSE GAS EFFECT.—The term 'greenhouse gas effect' means the adverse effects of greenhouse gases on health or welfare caused by the greenhouse gas's heat-trapping potential or its effect on ocean acidification.

''(p) IMPORT.—Irrespective of any other definition in law or treaty, the term 'import' means to land on, bring into, or introduce into any place subject to the jurisdiction of the United States.

''(q) PETROLEUM.—The term 'petroleum' means oil removed from the earth or the oil derived from tar sands or shale.

''(r) PRODUCTION GREENHOUSE GAS EMISSIONS.—The term 'production greenhouse gas emissions' means

the quantity of greenhouse gases, expressed in metric tons of CO_2-e, emitted to the atmosphere resulting from, non-exclusively, the production, manufacture, assembly, transportation, or financing of a product.

''(s) UPSTREAM GREENHOUSE GAS EMISSIONS.—The term 'upstream greenhouse gas emissions' means the quantity of greenhouse gases, expressed in metric tons of CO_2-e, emitted to the atmosphere resulting from, non-exclusively, the extraction, processing, transportation, financing, or other preparation of a covered fuel for use.

"SEC. 9902. CARBON FEE.

''(a) CARBON FEE.—There is hereby imposed a carbon fee on any covered entity's emitting use, or sale or transfer for an emitting use, of any covered fuel.

''(b) AMOUNT OF THE CARBON FEE.—The carbon fee imposed by this section is an amount equal to—

''(1) the greenhouse gas content of the covered fuel, multiplied by

''(2) the carbon fee rate.

''(c) CARBON FEE RATE.—For purposes of this section—

''(1) IN GENERAL.—The carbon fee rate, with respect to any use, sale, or transfer during a calendar year, shall be—

"(A) in the case of calendar year 2021, $15 per metric ton of CO_2-e, and

"(B) except as provided in paragraph (2), in the case of any calendar year thereafter—

"(i) the carbon fee rate in effect under this subsection for the preceding calendar year, plus

"(ii) $10.

"(2) EXCEPTIONS.—

"(A) INCREASED CARBON FEE RATE AFTER MISSED ANNUAL EMISSIONS REDUCTION TARGET.—In the case of any year immediately following a year for which the Secretary determines under section 9903(b) that the actual emissions of greenhouse gases from covered fuels exceeded the emissions reduction target for the previous year, paragraph (1)(B)(ii) shall be applied by substituting '$15' for the dollar amount otherwise in effect for the calendar year under such paragraph.

"(B) CESSATION OF CARBON FEE RATE INCREASE AFTER CERTAIN EMISSION REDUCTIONS ACHIEVED.—In the case of any year immediately following a year for which the Secretary determines under 9903(b) that actual emissions

of greenhouse gases from covered fuels is not more than 10 percent of the greenhouse gas emissions from covered fuels during the year 2010, paragraph (1)(B)(ii) shall be applied by substituting '$0' for the dollar amount otherwise in effect for the calendar year under such paragraph.

''(3) INFLATION ADJUSTMENT.—In the case of any calendar year after 2021, each of the dollar amounts in paragraphs (1)(B) and (2)(A) shall be increased by an amount equal to—

''(A) such dollar amount, multiplied by

''(B) the cost-of-living adjustment determined under section 1(f)(3) for the calendar year, determined by substituting 'calendar year 2010' for 'calendar year 2016' in subparagraph (A)(ii) thereof.

''(d) EXEMPTION AND REFUND.—The Secretary shall prescribe such rules as are necessary to ensure the fee imposed by this section is not imposed with respect to any nonemitting use, or any sale or transfer for a nonemitting use, including rules providing for the refund of any carbon fee paid under this section with respect to any such use, sale, or transfer.

''(e) EXEMPTIONS.—

''(1) AGRICULTURE.—

''(A) FUEL.—If any covered fuel or its derivative is used on a farm for a farming purpose, the Secretary shall pay (without interest) to the ultimate purchaser of such covered fuel or its derivative, the total amount of carbon fees previously paid upon that covered fuel or its derivative, as specified by rule of the Secretary.

''(B) FARM, FARMING USE, AND FARMING PURPOSE.—The terms 'farm', 'farming use', and 'farming purpose' shall have the respective meanings given such terms under section 6420(c).

''(C) OTHER GREENHOUSE GASES EMISSIONS FROM AGRICULTURE.—The carbon fee shall not be levied upon non-fossil fuel greenhouse gas emissions which occur on a farm.

''(2) ARMED FORCES OF THE UNITED STATES.—If any covered fuel or its derivative is used by the Armed Forces of the United States as supplies for vessels of war, vehicles, or electrical power generation equipment, the Secretary shall pay (without interest) to the ultimate purchaser of such covered fuel or its derivative, the total amount of

carbon fees previously paid upon that covered fuel or its derivative, as specified by rule of the Secretary.

"SEC. 9903. EMISSIONS REDUCTION SCHEDULE.

"(a) IN GENERAL.—An emissions reduction schedule for greenhouse gas emissions from covered fuels is hereby established, as follows:

"(1) REFERENCE YEAR.—The net greenhouse gas emissions during the year 2010 shall be the reference amount of emissions and shall be determined from the 'Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2010' published by the Environmental Protection Agency in April of 2012.

"(2) EMISSIONS REDUCTION TARGET.—The first emission reduction target shall be for the year 2023. The emission target for each year thereafter shall be the previous year's target emissions minus a percentage of emissions during the reference year determined in accordance with the following table:

"Year	**Emissions Reduction Target**
2010	Reference year
2021 to 2022	No emissions reduction target
2023 to 2030	5 percent of 2010 emissions per year
2031 to 2050	3 percent of 2010 emissions per year

"(b) ADMINISTRATIVE DETERMINATION.—Not later than 60 days after the beginning of each calendar year

beginning after the enactment of this section, the Secretary, in consultation with the Administrator, shall determine whether actual emissions of greenhouse gases from covered fuels exceeded the emissions reduction target for the preceding calendar year. The Secretary shall make such determination using the same, or appropriately updated, greenhouse gas accounting method as was used to determine the net greenhouse gas emissions in the 'Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2010' published by the Environmental Protection Agency in April of 2012.

"SEC. 9904. DECOMMISSIONING OF CARBON FEE.

''(a) IN GENERAL.—At such time that—

''(1) the Secretary determines under 9903(b) that actual emissions of greenhouse gases from covered fuels is not more than 10 percent of the greenhouse gas emissions during the year 2010, and

''(2) the monthly carbon dividend payable to an adult eligible individual has been less than $20 for 3 consecutive years,

the Secretary shall decommission in an orderly manner programs administering the carbon fee, the carbon border fee adjustment, and the Carbon Dividend Trust Fund.

''(b) INFLATION ADJUSTMENT.—In the case of any calendar year after 2021, the $20 amount under subsection (a)(2) shall be increased by an amount equal to—

''(1) such dollar amount, multiplied by

''(2) cost-of-living adjustment determined under section 1(f)(3) for the calendar year, determined by substituting 'calendar year 2020' for 'calendar year 2010' in subparagraph (A)(ii) thereof.

"SEC. 9905. CARBON CAPTURE AND SEQUESTRATION.

''(a) IN GENERAL.—The Secretary, in consultation with the Administrator and the Secretary of Energy, shall prescribe regulations for making payments as provided in subsection (b) to qualified facilities which capture and sequester qualified carbon dioxide or sequester qualified carbon dioxide obtained from one or more qualified facilities.

''(b) PAYMENT AMOUNTS.—

''(1) IN GENERAL.—The Secretary shall make payments to a qualified facility in the same manner as if such payment was a refund of an overpayment of the carbon fee imposed by section 9902, in cases in which such qualified facility—

''(A) uses any covered fuel—

''(i) with respect to which the carbon fee has been paid, and

"(ii) which results in the emission of qualified carbon dioxide,

"(B) captures such emitted, or an equivalent amount of, qualified carbon dioxide, and

"(C)(i) sequesters such qualified carbon dioxide in a manner which is safe, permanent, and in compliance with any applicable local, State, and Federal laws, or

"(ii) utilizes such qualified carbon dioxide or an equivalent amount of carbon dioxide in a manner provided in paragraph (3)(C).

"(2) AMOUNT OF REFUND.—The payment determined under this section shall be an amount equal to the lesser of—

"(A)(i) the adjusted metric tons of qualified carbon dioxide captured and sequestered or utilized, multiplied by

"(ii) the carbon fee rate during the year in which the carbon fee was imposed by section 9902 upon the covered fuel to which such carbon dioxide relates, or

"(B) the amount of the carbon fee imposed by section 9902 with respect to such covered fuel.

''(3) DEFINITIONS AND SPECIAL RULES.—For purposes of this section—

''(A) QUALIFIED CARBON DIOXIDE; QUALIFIED FACILITY.—

''(i) QUALIFIED CARBON DIOXIDE.—The term 'qualified carbon dioxide' has the same meaning given such term under section 45Q(c).

''(ii) QUALIFIED FACILITY.—The term 'qualified facility' means any industrial facility at which carbon capture equipment is placed in service.

''(B) ADJUSTED TOTAL METRIC TONS.—The adjusted total metric tons of qualified carbon dioxide captured and sequestered or utilized shall be the total metric tons of qualified carbon dioxide captured and sequestered or utilized, reduced by the amount of any carbon dioxide likely to escape and be emitted into the atmosphere due to imperfect storage technology or otherwise, as determined by the Secretary in consultation with the Administrator.

''(C) UTILIZATION.—The Secretary, in consultation with the Administrator, shall establish regulations providing for the methods

and processes by which qualified carbon dioxide may be utilized so as to exclude that qualified carbon dioxide safely and permanently from the atmosphere. Utilization may include the production of substances such as but not limited to plastics and chemicals. Such regulations shall minimize the escape or further emission of the qualified carbon dioxide into the atmosphere.

''(D) SEQUESTRATION.—Not later than 540 days after the date of the enactment of this section, the Secretary, in consultation with the Administrator, shall prescribe regulations identifying the conditions under which carbon dioxide may be safely and permanently sequestered.

''(4) COORDINATION WITH CREDIT FOR CARBON DIOXIDE SEQUESTRATION.—At such time that the Secretary prescribes regulations implementing this section, no payment under this section shall be allowed to a taxpayer to whom a credit has been allowed for any taxable year under section 45Q.

''SEC. 9906. ADMINISTRATIVE AUTHORITY.

''(a) IN GENERAL.—The Secretary in consultation with the Administrator shall prescribe such regulations, and other guidance, as may be necessary to carry out the

purposes of this subtitle and assess and collect the carbon fee imposed by section 9902.

''(b) SPECIFICALLY.—Such regulations and guidance shall include—

''(1) the identification of an effective point in the production, distribution, or use of a covered fuel for collecting such carbon fee, in such a manner so as to minimize administrative burden and maximize the extent to which full fuel cycle greenhouse gas emissions from covered fuels have the carbon fee levied upon them,

''(2) the identification of covered entities which shall be liable for the payment of the carbon fee,

''(3) requirements for the monthly payment of such fees,

''(4) as may be necessary or convenient, rules for distinguishing between different types of covered fuels,

''(5) as may be necessary or convenient, rules for distinguishing between a covered fuel's greenhouse gas content and its upstream greenhouse gas emissions,

''(6) rules to ensure that no covered fuel has the carbon fee or carbon border fee adjustment imposed upon it more than once, and

''(7) rules to ensure that the domestic implementation of the carbon fee coordinate with the implementation of the carbon border fee adjustment of chapter 102.

"CHAPTER 102—CARBON BORDER FEE ADJUSTMENT

"SEC. 9908. CARBON BORDER FEE ADJUSTMENT.

''(a) IN GENERAL.—The fees imposed by, and refunds allowed under, this section shall be referred to as the 'carbon border fee adjustment'.

''(b) PURPOSE.—The purpose of the carbon border fee adjustment is to protect animal, plant, and human life and health, to conserve exhaustible natural resources by preventing carbon leakage, and to facilitate the creation of international agreements.

''(c) IMPORTS TO THE UNITED STATES.—

''(1) IMPORTED COVERED FUELS FEE.—In the case of any person that imports into the United States any covered fuel, there shall be imposed a fee equal to the total carbon fee that would be imposed on the fuel's greenhouse gas content under the domestic carbon fee, including processing emissions.

''(2) IMPORTED CARBON-INTENSIVE PRODUCTS FEE.—In the case of any person that imports into the United States any carbon-intensive product, there shall be imposed a fee equal to the total carbon fee which would have accumulated upon the greenhouse gas content of the imported carbon-intensive product had the imported carbon-intensive product been produced domestically and subject to the domestic carbon fee.

''(3) MODIFICATIONS.—The Secretary shall make an administrative determination of whether any class of imported covered fuels or class of imported carbon-intensive product is carrying any total foreign carbon cost. The Secretary shall make a determination of whether international law or the enhancement of global greenhouse gas mitigation efforts require that those foreign cost of carbon be deducted from the border carbon fee adjustment determined in subsection (c)(1) or subsection (d)(1).

''(4) FOREIGN COST OF CARBON; FOREIGN CARBON COSTS.—For purposes of this subsection, the term 'foreign cost of carbon' or 'foreign carbon cost' means the explicit price a foreign jurisdiction places upon the emission of greenhouse gas pollution to the atmosphere through law or regulation. Such price

shall be expressed as the price per metric ton of CO_2-e.

''(d) REFUND ON EXPORTS FROM UNITED STATES.—

''(1) COVERED FUELS.—Under regulations prescribed by the Secretary, in the case of a covered fuel produced in the United States with respect to which the fee under section 9902 was paid, there shall be allowed as a credit or refund (without interest) to any exporter of such covered fuels an amount equal to the total carbon fee levied upon the exported covered fuel up to the time of its exportation, including processing emissions. Any such credit or refund shall be allowed in the same manner as if it were an overpayment of tax imposed by section 9902.

''(2) CARBON-INTENSIVE PRODUCTS.—Under regulations prescribed by the Secretary, there shall be allowed a credit or refund (without interest) to exporters of carbon-intensive products manufactured or produced in the United States an amount equal to the total carbon fees accumulated upon the greenhouse gas content of the exported carbon-intensive product up to the time of exportation. Any such credit or refund shall be allowed in the same manner

as if it were an overpayment of the fee imposed by section 9902 or 9904.

"SEC. 9909. ADMINISTRATION OF THE CARBON BORDER FEE ADJUSTMENT.

"(a) GENERALLY.—The Secretary in consultation with the Administrator shall prescribe regulations and guidance which implement the carbon border fee adjustment under section 9908.

"(b) COLLABORATION.—In administering any aspect of the border carbon fee adjustment it is the sense of Congress that the Secretary should collaborate with authorized officers of any jurisdiction, including sub-national governments, affected by the carbon border fee adjustment.

"(c) METHODOLOGY.—In administering the border carbon fee adjustment, the Secretary shall use methodologies, procedures, and data which as may be necessary or convenient—

"(1) disaggregate a product's greenhouse gas content;

"(2) are consistent with international law and facilitate international cooperation;

"(3) in the case of incomplete data, use customary methods of interpolation that favor enhanced mitigation and facilitate international cooperation;

''(4) avoid the double pricing of greenhouse gas emissions; and

''(5) harmonize the border carbon fee adjustment with the domestic carbon fee so as to ensure all covered fuels used in the United States are subject to the carbon fee.

''(d) SCHEDULE.—The Secretary shall—

''(1) begin implementation the border carbon fee adjustment for covered fuels at the same time as the implementation of the carbon fee; and

''(2) begin implementation of the border carbon fee adjustment for carbon-intensive products within two years of the date of the enactment of the Energy Innovation and Carbon Dividend Act of 2021.

''(e) PROCEDURE.—The Secretary shall—

''(1) establish fair, timely, impartial, and as necessary confidential procedures by which the importer of any carbon-intensive product or any covered fuel may petition the Secretary to revise the Secretary's determination of its border carbon fee adjustment liability calculated under section 9908(c)(1);

''(2) establish fair, timely, impartial, and as necessary confidential procedures by which any exporter of any product from the United States may

petition the Secretary to include that exported product on the list of carbon-intensive products; and

''(3) establish fair, timely, impartial, and as necessary confidential procedures by which the exporter of any carbon-intensive product or any covered fuel may petition the Secretary to revise the Secretary's determination of its border carbon fee adjustment refund calculated under section 9908(d).

''(f) SHIPMENTS FROM THE UNITED STATES TO THE TERRITORIES OF THE UNITED STATES.—Notwithstanding any other treaty, law, or policy, shipments of covered fuels or carbon-intensive products from the United States to Guam, the United States Virgin Islands, American Samoa, Puerto Rico, and the Northern Mariana Islands shall be eligible for a refund of the carbon fee under section 9908(d).

''(g) IMPORTS TO THE TERRITORIES OF THE UNITED STATES.—Notwithstanding any other treaty, law, or policy, imports of covered fuels or carbon-intensive products to Guam, the United States Virgin Islands, American Samoa, Puerto Rico, and the Northern Mariana Islands shall not be subject to section 9908(c).

"SEC. 9910. ALLOCATION OF CARBON BORDER FEE ADJUSTMENT REVENUES.

''The revenues collected under this chapter may be used to supplement appropriations made available in fiscal years 2022 and thereafter—

''(1) to U.S. Customs and Border Protection, in such amounts as are necessary to administer the carbon border fee adjustment, then

''(2) to the Green Climate Fund, created by decision 3/CP.17 adopted at the 17th Conference of the Parties to the United Nation Framework Convention on Climate Change held in Durban, November 28 to December 11, 2011.

"SEC. 9911. TREATIES AND INTERNATIONAL NEGOTIATIONS.

''(a) CONFORMANCE WITH INTERNATIONAL TREATIES.—In the case that the Appellate Body of the World Trade Organization, or any other authoritative international treaty interpreter, shall find any portion of the carbon border fee adjustment under this chapter to violate any treaty to which the United States is a party, the Secretary of State is authorized to alter that aspect of such carbon border fee adjustment found to violate a treaty obligation so as to bring the carbon border fee adjustment into conformance with international law.

''(b) INTERNATIONAL NEGOTIATIONS.—The Congress finds the international mitigation of greenhouse gas emissions to be of national importance. Therefore, the Congress encourages the Secretary of State, or the Secretary's designee, to commence and complete negotiations with other nations with the goal of forming treaties, environmental agreements, accords, partnerships or any other instrument that effectively reduces global greenhouse gas emissions to zero percent of 2010 levels by 2050 and which respect the principle of common but differentiated responsibilities and respective capabilities.

''(c) SUSPENSION OF THE CARBON BORDER FEE ADJUSTMENT.—The Secretary may suspend the border carbon fee adjustment, in whole or in part—

''(1) when, in the determination of the Secretary, a country has implemented greenhouse gas mitigation policies sufficient to contribute to a global net reduction of greenhouse gas emissions to zero by 2050. In making such determination, the Secretary may partially suspend particular provisions of the carbon border fee adjustment. In making the determination, the Secretary shall consult with the importing country. In making the determination, the Secretary shall follow all existing treaty obligations.

The Secretary shall review any carbon border fee adjustment suspension at least every 5 years, or

''(2) by treaty or other international agreement that meets the criteria of section 9911(c)(1) and includes provisions for the suspension of the border carbon fee adjustment.''.

SEC. 4. ESTABLISHMENT OF THE CARBON DIVIDEND TRUST FUND.

(a) IN GENERAL.—Subchapter A of chapter 98 of the Internal Revenue Code of 1986 is amended by adding at the end the following:

''SEC. 9512. CARBON DIVIDEND TRUST FUND.

''(a) ESTABLISHMENT AND FUNDING.—There is hereby established in the Treasury of the United States a trust fund to be known as the 'Carbon Dividend Trust Fund', consisting of such amounts as may be appropriated to such trust fund as provided for in this section.

''(b) TRANSFERS TO THE CARBON DIVIDEND TRUST FUND.—There is hereby appropriated to the Carbon Dividend Trust Fund amounts equal to the fees received into the Treasury less any amounts refunded or paid under section 9902(d) or 9905 of chapter 101 for each month.

''(c) EXPENDITURES.—Amounts in the trust fund shall be available for the following purposes:

"(1) ADMINISTRATIVE EXPENSES.—So much of the expenses necessary to administer the Carbon Dividend Trust Fund for each year, as does not exceed—

"(A) in the case of the first 5 calendar years ending after the date of the enactment of this section, the administrative expenses for any year may not exceed 8 percent of amounts appropriated to the Carbon Dividend Trust Fund during such year, and

"(B) in the case of any calendar year thereafter, 2 percent of the 5-year rolling average of the amounts appropriated to the Carbon Dividend Trust Fund.

"(2) OTHER ADMINISTRATIVE EXPENSES.—So much of the expenses as are necessary to administer chapter 101 for any year as does not to exceed 0.60 percent of the amounts appropriated to the Carbon Dividend Trust Fund for the previous year, and further limited as follows:

"(A) The Department of the Treasury.

"(B) The Social Security Administration.

"(C) The Environmental Protection Agency.

"(D) Department of State.

"(3) CARBON DIVIDEND PAYMENTS.—

"(A) IN GENERAL.—From the amounts in the Carbon Dividend Trust Fund made available under paragraphs (1) and (2) of this subsection for any year, the Secretary shall for each month beginning no more than 270 days after the date of the enactment of the Energy Innovation and Carbon Dividend Act of 2021, make carbon dividend payments to each eligible individual.

"(B) PRO-RATA SHARE.—A carbon dividend payment is one pro-rata share for each adult, and half a pro-rata share for each child under 19 years old, of amounts available for the month in the Carbon Dividend Trust Fund.

"(C) ELIGIBLE INDIVIDUAL.—The term 'eligible individual' means, with respect to any month, any natural living person who has a valid Social Security number or taxpayer identification number and is a citizen or lawful resident of the United States (other than any individual who is a citizen of any possession of the United States and whose bona fide residence is outside of the United States). The Secretary is

authorized to verify an individual's eligibility to receive a carbon dividend payment.

"(D) FEE TREATMENT OF PAYMENTS.—Amounts paid under this subsection shall be includible in gross income.

"(E) FEDERAL PROGRAMS AND FEDERAL ASSISTED PROGRAMS.—The carbon dividend amount received by any individual shall not be taken into account as income and shall not be taken into account as resources for purposes of determining the eligibility of such individual or any other individual for benefits or assistance, or the amount or extent of benefits or assistance, under any Federal program or under any State or local program financed in whole or in part with Federal funds.

"(F) ADVANCE PAYMENT.—The Secretary shall transfer to the Carbon Dividend Trust Fund such amounts as are necessary for the disbursement of an advanced carbon dividend to all eligible individuals as follows:

"(i) An advanced carbon dividend shall be the same as the anticipated first carbon dividend required to be distributed under subparagraph (A) and shall be dis-

tributed the month prior to the first collection of the carbon fee.

''(ii) Total amounts disbursed as advanced carbon dividends shall be deducted from the carbon dividends on a pro-rata basis over the first 3 years after the disbursement of the first carbon dividends.

''(d) ADMINISTRATIVE AUTHORITY.—The Secretary shall promulgate rules, guidance, and regulations useful and necessary to implement the Carbon Dividend Trust Fund.

''(e) ASSIGNMENT OF BENEFITS.—The right of any person to any future payment under this chapter shall not be transferable or assignable, at law or in equity, and none of the moneys paid or payable or rights existing under subsection (c)(3) shall be subject to execution, levy, attachment, garnishment, or other legal process, or to the operation of any bankruptcy or insolvency law.''.

(b) CLERICAL AMENDMENT.—The table of sections for subchapter A of chapter 98 of such Code is amended by adding at the end the following new item:

''Sec. 9512. Carbon Dividend Trust Fund.''.

SEC. 5. LIMITED DISCLOSURE OF INFORMATION.

Section 6103(l) of the Internal Revenue Code of 1986 is amended by adding at the end the following new paragraphs:

''(23) LIMITED DISCLOSURE OF IDENTITY INFORMATION RELATING TO CARBON DIVIDEND PAYMENTS.—

''(A) DEPARTMENT OF TREASURY.—Individual identity information shall, without written request, be open to inspection by or disclosure to officers and employees of the Department of the Treasury whose official duties require such inspection or disclosure for purposes of administering section 9512 (relating the Carbon Dividend Trust Fund).

''(B) COMMISSIONER OF SOCIAL SECURITY.—The Commissioner of Social Security shall, on written request, disclose to officers and employees of the Department of the Treasury individual identity information which has been disclosed to the Social Security Administration as is necessary to administer section 9512.

''(C) RESTRICTION ON DISCLOSURE.—Information disclosed under this paragraph shall be disclosed only for purposes of, and to the extent necessary in, carrying out section 9512.''.

SEC. 6. NATIONAL ACADEMY OF SCIENCES REVIEW OF CARBON FEE AND EMISSIONS REDUCTION SCHEDULE.

(a) IN GENERAL.—Not later than 5 years after the date of the enactment of this Act, the Secretary of Energy shall enter into an agreement with the National Academy of Sciences to prepare a report relating to the carbon fee imposed by section 9902 of the Internal Revenue Code of 1986 and the emissions reductions schedule established under section 9903 of such Code.

(b) REPORT REQUIREMENTS.—Such report shall—

(1) assess the efficiency and effectiveness of the carbon fee in achieving the emissions reduction targets set forth in section 9903 of such Code;

(2) describe and make recommendations on whether the carbon fee rate and annual increases prescribed by section 9902(c) of such Code should be adjusted in order to optimize the efficiency and effectiveness of this Act in achieving the emissions reduction targets set forth in section 9903 of such Code;

(3) describe the potential of the carbon fee to achieve future emissions targets set forth in section 9903(a) of such Code through the year 2050;

(4) describe and evaluate the effectiveness of the carbon fee in reducing emissions from key sec-

tors of the economy, including sectors of the economy that have decreased their carbon emissions, sectors of the economy that have increased their carbon emissions, and sectors of the economy in which carbon emissions have not changed;

(5) make findings and recommendations to Federal departments and agencies and to Congress on actions that could be taken to reduce carbon emissions in the sectors of the economy in which carbon emissions have not decreased;

(6) make findings and recommendations on adjusting regulations enacted under the Clean Air Act and other Federal laws that affect economic sectors achieving the emissions reduction targets set forth in section 9903 of such Code; and

(7) provide an assessment of any other factors determined to be material to the program's efficiency and effectiveness in achieving the goals set forth in this Act.

(c) REPORT MADE PUBLICLY AVAILABLE.—Not later than one year after the review in subsection (a) has commenced, the Secretary of Energy shall submit to Congress the report required under subsection (a). Such report shall be made electronically available to the public and open to

public comment for at least 60 days before the final submission to Congress.

SEC. 7. IMPACT OF CARBON FEE ON BIOMASS USE AND CARBON SINKS.

(a) STUDY OF BIOMASS.—The Secretary of Energy shall enter into an agreement with the National Academy of Sciences and the Administrator of the Environmental Protection Agency to conduct a study, make recommendations, and submit a report regarding the impact of the carbon fee on the use of biomass as an energy source and the resulting impacts on carbon sinks and biodiversity.

(b) STUDY REQUIREMENTS.—The study conducted under subsection (a) by the National Academy of Sciences shall include analysis, documentation, and determinations on—

(1) the carbon fee and its impact on the use of biomass as an energy source and greenhouse gas emissions from the use of biomass as an energy source;

(2) the impacts of the use of biomass as an energy source on carbon sinks and biodiversity; and

(3) the various types of biomass that are being used as an energy source.

(c) RECOMMENDATIONS.—Based on the findings and conclusions of the study, the National Academy of

Sciences shall make recommendations to Federal departments and agencies and to Congress. The recommendations shall include any actions that should be taken to mitigate impacts of the carbon fee on—

(1) increasing greenhouse gas emissions from the use of biomass as an energy source; and

(2) degradation of carbon sinks and biodiversity relating to the use of biomass as an energy source.

(d) REPORT.—The National Academy of Sciences shall prepare a report that includes any findings and recommendations made pursuant to this section and, not later than 18 months after the date of the enactment of this Act, make such report electronically available to the public.

SEC. 8. EFFECTIVE DATE.

The amendments made by this Act shall take effect on the date of the enactment of this Act, except the carbon fee under section 9902 of the Internal Revenue Code of 1986 shall apply to uses, sales, or transfers no more than 270 days after the date of the enactment of this Act.

SEC. 9. PRINCIPLE OF INTERPRETATION.

In the case of ambiguity, the texts of this statute and its amending texts shall be interpreted so as to allow for the most effective abatement of greenhouse gas emissions.

SEC. 10. NO PREEMPTION OF STATE LAW.

(a) IN GENERAL.—Nothing in this Act shall preempt or supersede, or be interpreted to preempt or supersede, any State law or regulation.

(b) NO PREEMPTION OF STATE COMMON LAW OR STATUTORY CAUSES OF ACTION.—Noting in this Act, nor any standard, rule, requirement, risk evaluation, or assessment created or implemented pursuant to this Act, shall be construed to preempt any State common law or State statutory law creating a remedy for civil relief.

Æ

Citizens' Climate Lobby

Financial Impact of the Energy Innovation & Carbon Dividend Act on American Households

Local Impacts in California - District 18

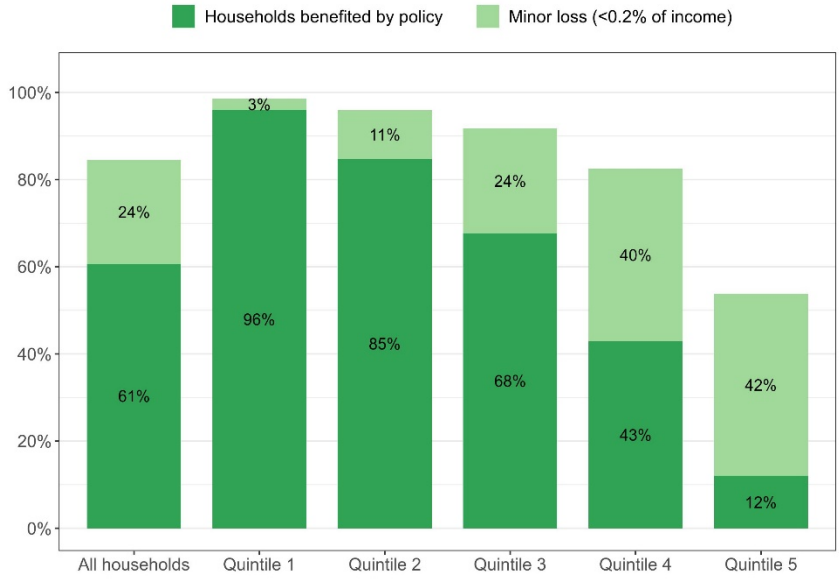
Introduction

Members of Congress often wonder how the Energy Innovation and Carbon Dividend Act will impact their constituents. Citizens' Climate Lobby commissioned this study[1] to show how average households and various subgroups in each state and district would fare financially under the policy. This study confirms others[2] showing that **two-thirds of Americans will enjoy a net benefit** from a carbon fee and dividend plan.

National Results

Figure 1: Impact per Consumption[3] Quintile (National).

61 percent of U.S. households and 68 percent of individuals receive more in dividends than they pay in higher costs (defined as a "net gain"). The vast majority of households in the three lowest-consumption quintiles experience a net gain in this way. On average, households in the bottom quintile come out ahead by $241 in that first year. Households in the top quintile will typically bear a net cost of $538, but for most of these families, this is less than 0.2 percent of their income (a minor loss).



---

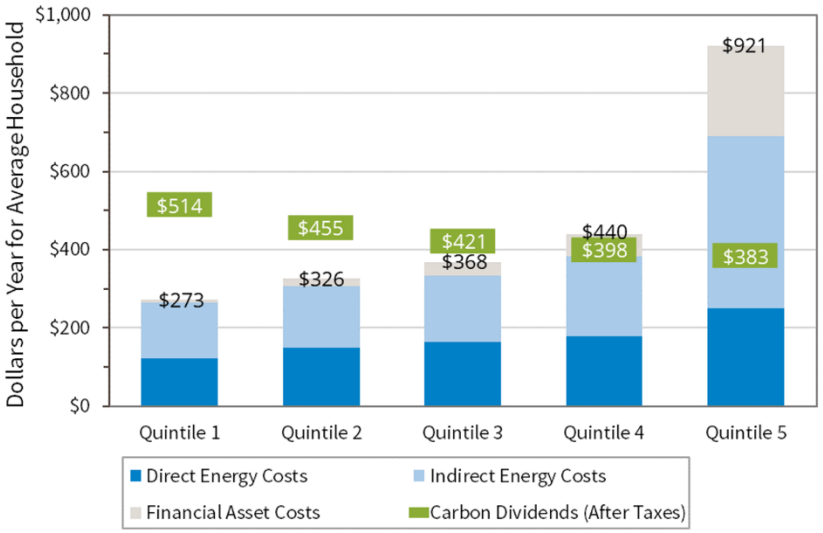
1 All data are from the 2020 working paper, "The Impact of a Carbon Fee and Dividend Policy on the Finances of U.S. Households" by researcher Kevin Ummel. This paper introduces new data and methodological improvements to a 2016 pre-legislation study by the same author. Though the new study considered three scenarios, graphics herein are derived from the "baseline case" where businesses absorb 15 percent of the fee and pass the remaining 85 percent on to consumers. This is considered the most likely scenario.

2 "Methodology for Analyzing a Carbon Tax," Department of the Treasury, Office of Tax Analysis, 2017

3 *Consumption* refers to the amount of household spending, not energy consumption. Consistent with economic literature, consumption is used to rank-order households by quintile. It is more accurate than income for measuring how financially "well-off" a household is because households consume from both their income and net assets or wealth.

Figure 2: Carbon Fee Costs versus Carbon Dividends by Consumption Quintile (National).

This chart explains how the carbon fee and dividend structure produces these outcomes. Households vary in their carbon footprints, but on average, wealthier households consume far more energy than poorer ones, simply due to their lifestyles.



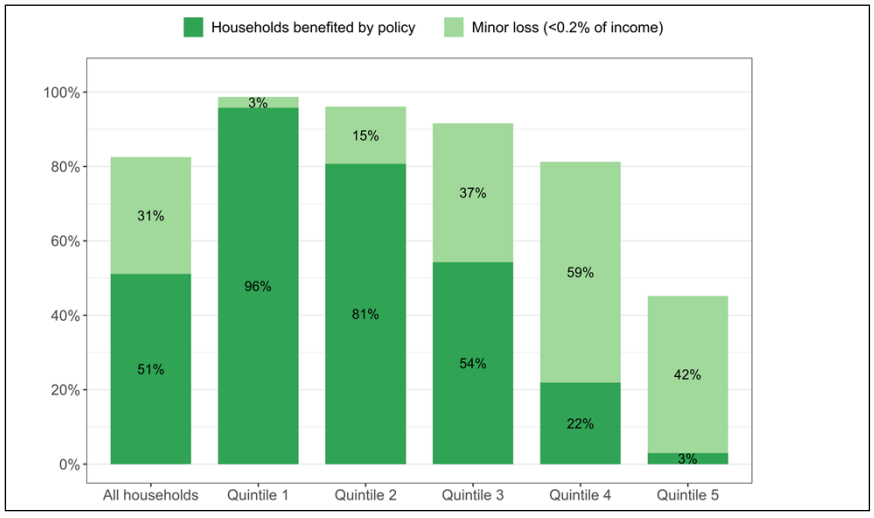
Costs from the Carbon Fees are passed down to households via *direct energy* prices (gasoline, electricity, home heating), *indirect energy* prices (fossil emissions embedded in products we buy), and *financial asset costs* (costs assumed by energy-using businesses, which are then passed back to owners).

Carbon dividends more than offset those costs for the bottom three quintiles, and the fourth virtually breaks even. Wealthier households typically have much higher carbon footprints, due mainly to their high indirect energy consumption and investments in high-emitting industries.

Congressional District Results

Figure 3: California - District 18 Impact by Consumption Quintile.

In this district, 51 percent of households get enough in dividends to exceed their increased costs, while 31 percent incur only a minor loss (less than 0.2 percent of income – e.g., for a $50,000 income, less than $100 per year).



As is the case nationwide, the poorest households benefit the most financially, while many of the wealthier households incur no more than a minor loss.

State- or district-level results are determined by the mix of household economic conditions, the regional carbon intensity of energy, and local energy prices.

Figure 4: California - District 18 Impact by Race/Ethnicity.

Families of color experience, on average, more financial gains under this plan as a result of lower household spending (associated with lower carbon footprint), larger households (lower emissions per capita), and/or other community factors (*e.g.*, more use of public transportation).

These results are achieved without the need for complex and costly targeting or means testing. Also note that these benefits are in addition to the health benefits of reduced air pollution from the policy.

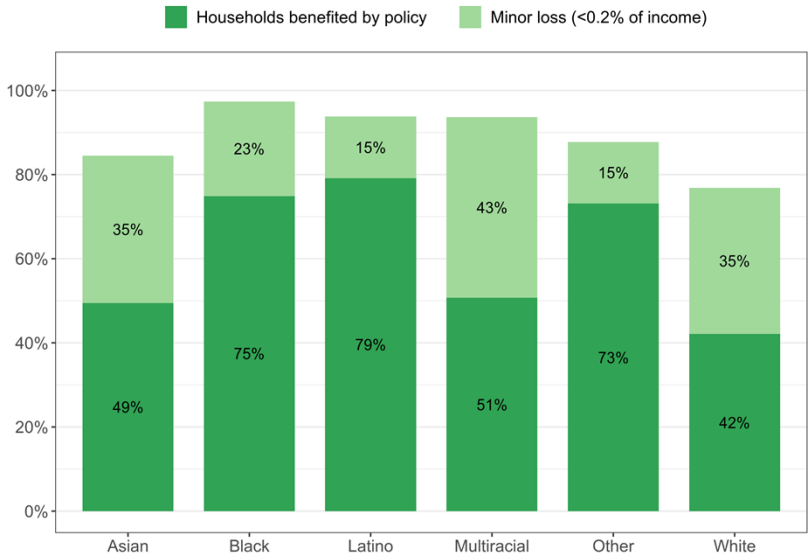


Figure 5: California - District 18 Impact by Age Group.

This chart reflects the impact of age on both carbon footprints and dividends received.

Older households tend to have smaller footprints, reflecting reduced mobility and consumption as a result of low fixed incomes. Younger households tend to be larger, and are therefore benefited by the dividend formula, in addition to typically having lower early-career spending.

As with the other charts, these outcomes reflect mainly economic status.

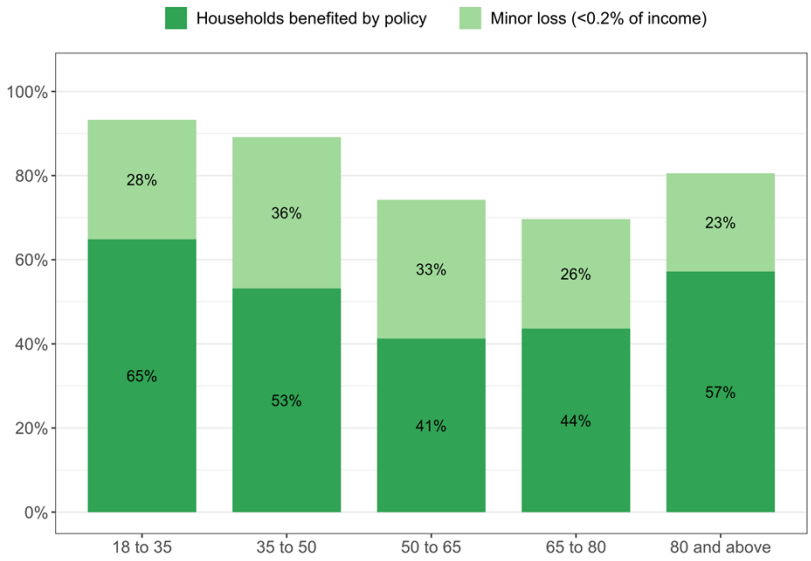


Figure 6: California - District 18 Impact by Household Type.

This chart reports data for demographic groups of particular interest to many legislators.

“Poverty” and “Low income” denote income below 100% and 200% of the Federal Poverty Level, respectively. “Minority” refers to all racial/ethnic groups other than non-Hispanic whites. “Older adults” are defined as a household with at least one person age 65 or older, no more than two adults, and no children. “Family of four” and “Single Parent” are self-explanatory.

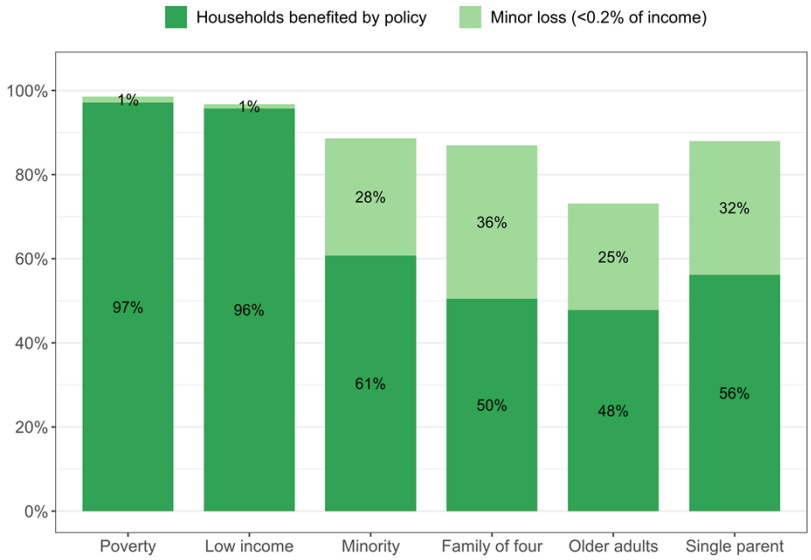
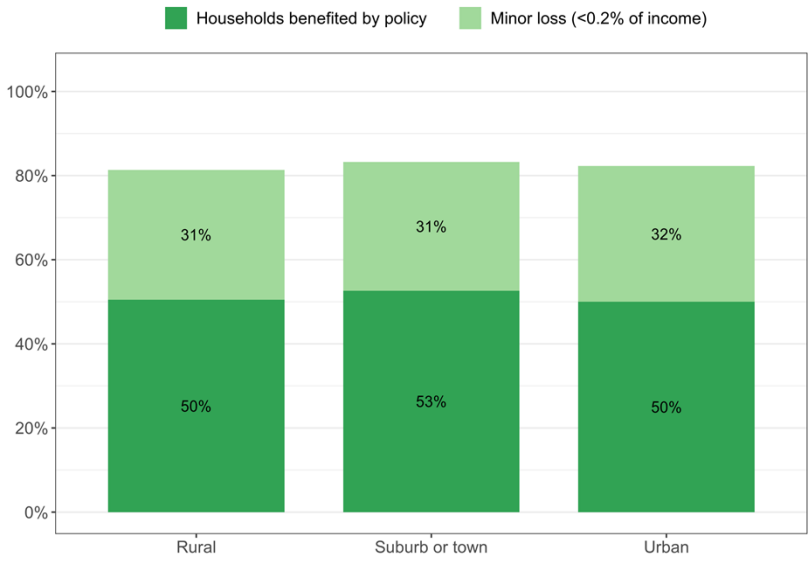


Figure 7: California - District 18 Impact by Community Type.

This chart breaks down data by “community type” – Rural, Suburb or Town, and Urban.

Across the country, there are few differences in economic outcomes between rural and urban communities.

In specific districts, the results will vary based on the community composition (*e.g.*, a district that is predominantly urban or predominantly rural may show larger disparities due to limited data on households that fall into a different category).



COLUMBIA | SIPA
Center on Global Energy Policy

A COMPARISON OF THE BIPARTISAN ENERGY INNOVATION AND CARBON DIVIDEND ACT WITH OTHER CARBON TAX PROPOSALS

Working Paper

BY NOAH KAUFMAN
NOVEMBER 2018

Executive Summary

In November 2018, three Republicans and three Democrats in the House of Representatives led by Congressman Deutch (D-FL) proposed the Energy Innovation and Carbon Dividend Act ("Deutch proposal"), the first bipartisan carbon pricing proposal in Congress in nearly a decade. The proposed legislation would establish a national carbon tax, which would achieve reductions in greenhouse gas emissions at a lower cost than approaches that focus on specific sectors, regions, or technologies. Proceeds from the carbon tax would be returned to Americans in the form of monthly rebate checks.

Three other prominent federal carbon tax proposals have been released or modified in 2018: (1) by Congressional Democrats led by Senator Whitehouse ("Whitehouse proposal"); (2) by Congressional Republicans led by Congressman Curbelo ("Curbelo proposal"); and (3) by the Climate Leadership Council, authored by James Baker and George Shultz ("Baker proposal").

The purpose of the Carbon Tax Research Initiative of the Center on Global Energy Policy at Columbia University is to enable the thoughtful design and consideration of federal carbon tax policies in the United States. To that end, this paper describes how the Deutch proposal resembles and differs from the other prominent carbon tax proposals of 2018.

The Deutch proposal is similar to the other plans in several ways. For example, the carbon tax is imposed primarily on producers of fossil fuels near where the fuels enter the economy, which keeps the number of regulated entities at manageable levels. It covers nearly all carbon dioxide (CO_2) emissions from the US energy system. Importantly, the proposal includes a border carbon adjustment to avoid harming the competitiveness of US industries in international markets.

Like the Curbelo proposal, the Deutch proposal would suspend certain EPA regulations that are redundant with a carbon tax—regulations of stationary sources of emissions covered by the tax—and it would leave in place EPA regulations of CO_2 emissions from motor vehicles and greenhouse gases (GHGs) not covered by the tax. The Deutch proposal would not eliminate fuel excise taxes (as in the Curbelo proposal) or tort liability for emitters (as in the Baker proposal).

The carbon tax rates in the Deutch proposal start relatively low ($15/ton) but increase rapidly to levels that far exceed the rates in other carbon tax proposals. Carbon tax rates rise to nearly $100/ton (in inflation-adjusted terms) by 2030 and potentially higher if the emissions targets stipulated in the bill are not met.

While a more detailed review of the Deutch proposal is needed to understand its likely impacts on emissions, energy markets and the economy, analyses of other federal carbon taxes enable the following general and preliminary conclusions:

- **The higher carbon tax rates of Deutch proposal would lead to larger emissions reductions, carbon tax revenues and impacts on energy markets by the late 2020s compared to the other carbon tax proposals.** By 2030, carbon tax rates under the Deutch proposal would be at least 60 percent higher than under the Whitehouse and Baker proposals and at least two times higher than under the Curbelo proposal.
- **The Deutch proposal would likely cause emissions to fall below the targets the plan lays out through at least 2030.** The legislation targets emissions reductions of 45% below 2015 levels by 2030 (52% below 2005 levels). Analysis of the Whitehouse proposal shows emissions falling 65 to 90 percent of the way to that 2030 target with significantly lower carbon tax rates than the Deutch proposal's (Larsen et al 2018).
- **The Deutch proposal would rapidly decarbonize the US power sector.** The carbon tax rates in the Deutch proposal would provide a substantial boost to low carbon generation sources including solar, wind and nuclear energy, and virtually eliminate the use of coal in the US electricity system by 2030 (Larsen et al. 2018).
- **Under the Deutch proposal, low- and middle-income households would receive more in rebates than they pay in taxes, while high-income households would pay more in taxes than they receive in rebates.** A relatively small share of carbon tax payments would come from low- and middle-income households. If these households are given an equal share of the carbon tax revenues, as they would be under the Deutch proposal, the rebates received by the average low- and middle-income households would exceed the additional expenditures of these households due to the higher prices caused by the carbon tax (Rosenberg et al. 2018).
- **Using revenues for rebates under the Deutch plan would sacrifice opportunities for better macroeconomic outcomes or government services.** The Whitehouse proposal returns revenues to Americans primarily by cutting the payroll taxes paid by workers, which would boost the economy by encouraging work. The Curbelo proposal allocates the revenue to government programs to support transportation infrastructure, energy innovation, climate change adaptation, and assistance for displaced workers (Diamond and Zodrow 2018, Kaufman and Gordon 2018).

Introduction

In November 2018, Representatives Deutch (D-FL), Fitzpatrick (R-PA), Delaney (D-MD), Rooney (R-FL), Crist (D-FL) and Trott (R-MI) proposed the Energy Innovation and Carbon Dividend Act, which would put a price on carbon dioxide emissions in the form of a carbon

tax ("Deutch Proposal"). It is the first bipartisan proposal for a federal carbon pricing policy since a proposal from Senators Collins (R-ME) and Cantwell (D-WA) in 2010.

The Deutch proposal follows other carbon tax proposals in 2018 by Senator Whitehouse (D-RI) and congressional Democrats in February and by Representative Curbelo (R-FL) and congressional Republicans in July.[1] While not yet proposed as formal legislation, the carbon tax proposal of the Climate Leadership Council, authored by James Baker and George Shultz ("Baker proposal"), also garnered considerable attention in 2018.[2]

The next two sections describe the major design elements of the Deutch proposal and compare them to the other prominent federal carbon tax proposals. No detailed and comprehensive analysis of the Deutch proposal has been completed to date, but the third section draws various preliminary conclusions about the policy's likely impacts on emissions, energy markets, and the economy using analyses of other federal carbon tax scenarios.

Ways the Federal Carbon Tax Proposals Are Similar

Which Emissions Are Taxed

A carbon tax with a broader scope will achieve more emissions reductions because the financial incentive to reduce emissions covers additional mitigation opportunities. However, covering certain emissions sources—like those from crops or methane leaks from fossil fuel systems—is difficult for administrative (and perhaps also political) reasons.

The Deutch proposal covers virtually all of the US energy system's CO_2 emissions,[3] which account for about 90 percent of the country's net greenhouse gas emissions (GHG) and 80 percent of gross GHGs.[4] Proposals with this degree of coverage are colloquially referred to as "economywide" carbon taxes. The Whitehouse, Curbelo, and Baker proposals are economywide carbon taxes as well.

Carbon tax proposals often add a few additional percentage points of coverage by applying the policy to some non-CO_2 GHGs and CO_2 emissions from industrial processes. The Deutch proposal puts a separate fee on hydrofluorocarbons (HFCs) emissions but does not cover industrial processes or methane emissions.[5]

Where Emissions Are Taxed

Similar to other prominent federal carbon tax proposals, the Deutch proposal is structured to minimize the number of taxed entities: coal is taxed at the mine, natural gas at the processing plant, and petroleum at the refinery. The tax is imposed on imported fuels when they enter the country.

Regardless of where the tax is imposed, firms will attempt to pass these costs on to consumers in the form of higher prices. Therefore, while the point of taxation matters to individual businesses and sectors, it is not a major determining factor of the overall energy market, emissions, or economic outcomes of a carbon tax.

Border Carbon Adjustment

Unilaterally implementing a carbon tax raises various concerns for producers of products that are heavily carbon intensive and traded in international markets. First, companies may be put at a disadvantage compared to foreign competitors whose products are not taxed at comparable rates. Second, if US producers relocate their operations to places without similar or equivalent regulations, the carbon tax would not reduce their greenhouse gas emissions, it would just move their place of origin.

To lessen these concerns, the Deutch proposal and the three other prominent carbon tax proposals have all proposed a border carbon adjustment (BCA), requiring importers of carbon-intensive goods to pay a fee and providing a rebate to exporters of the same products.

While simple in theory, designing a BCA is complex in practice. It is difficult to track the carbon intensity of some products, particularly when they are produced abroad. Imports from countries that have comparable regulations should arguably be treated differently than imports from countries without such regulations. Finally, scholars have long debated the compatibility of a BCA with international trade law. Countries in the World Trade Organization (WTO) in general are not allowed to selectively tax products from other WTO countries, although there are exceptions (e.g., for environmental protection) for which a well-designed BCA would arguably qualify.[6]

The Deutch proposal makes a set of choices to overcome these challenges associated with its BCA: the mechanism will apply only to products that exceed a certain level of carbon intensity, and the fee differs across trading partners based on a "foreign cost of carbon" that will be defined for each major trading partner. The other prominent proposals make somewhat different choices. These details are likely to be subject to refinement and negotiation in any carbon tax legislation that receives serious attention in Congress.

Ways the Federal Carbon Tax Proposals Differ

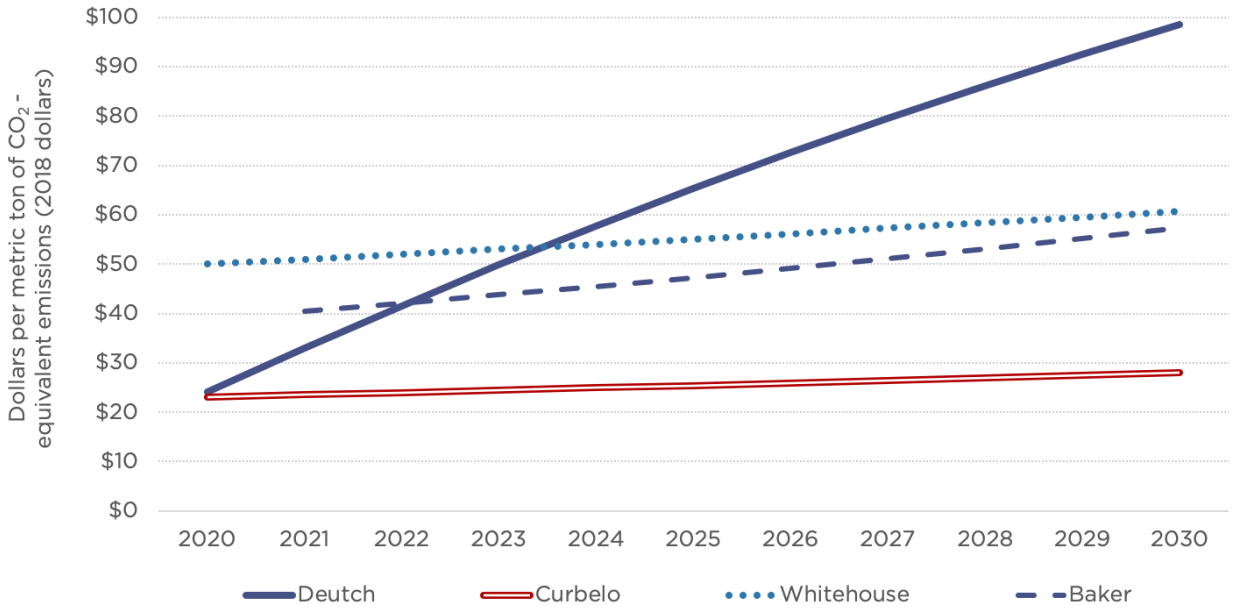
Carbon Tax Rates

A carbon tax requires policymakers to define the schedule of prices for carbon dioxide emissions, typically on an annual basis. Tax rates that are too low risk failing to accomplish the goals of the policy, which may be a combination of emissions reductions, revenue, and a price signal for investors. Tax rates that rise too high too quickly risk disrupting the energy system and economy. One recent study identified carbon tax rates of $40–$80 per metric ton by 2020 and $50–$100 per metric ton by 2030 as consistent with the Paris goals of limiting warming to well below 2 degrees Celsius (High-Level Commission on Carbon Prices 2017).

Under the Deutch Proposal, the tax starts at $15/ton of CO_2 emissions in 2019 and increases by $10/ton per year, which means the tax rate rises to $125/ton by 2030. This figure includes the effects of inflation, so the inflation-adjusted carbon tax levels are lower—perhaps a bit less than $100/ton in 2030. The Deutch Proposal also makes the tax rate increases dependent on emissions outcomes: the tax rate increases by $15/ton per year if the emissions targets stipulated in the proposal are not met.

Figure 1 shows that the Deutch proposal's carbon tax rates are far higher than the other federal carbon tax proposals by 2030. The Whitehouse proposal starts at a higher level but increases at a much slower rate. The Curbelo proposal's carbon tax rates are about half as large as those in the Whitehouse proposal, although they could rise by an additional $2/ton annually if emissions targets are not achieved. Under the Deutch proposal, the carbon tax rates continue to increase rapidly after 2030.

Figure 1: Carbon Tax Rates in Prominent Federal Proposals



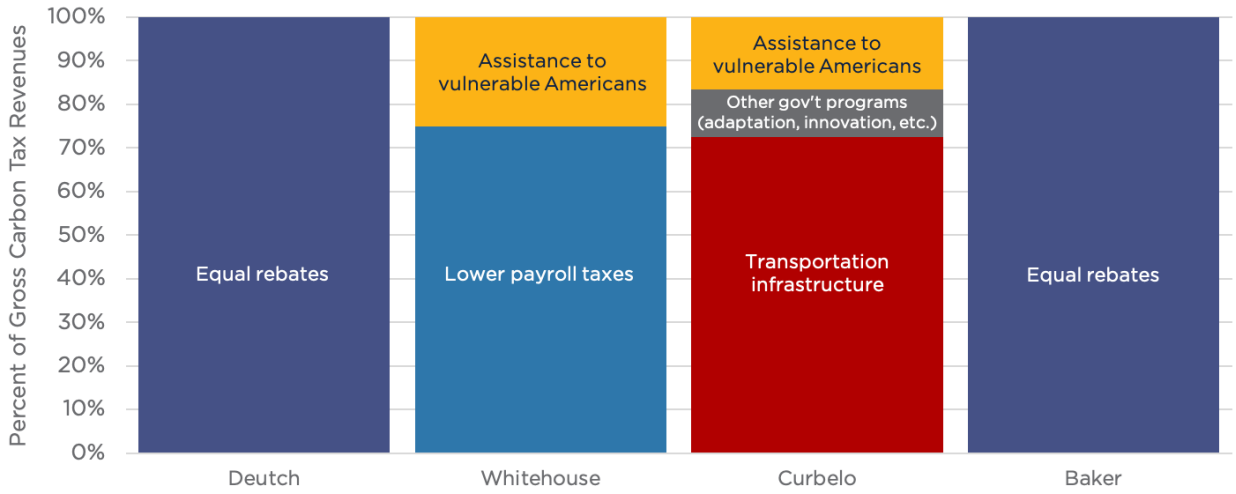
Notes: Assumes an annual inflation rate of 2 percent per year.
The Baker Proposal has not been formally proposed. A 2018 Climate Leadership Council report designated the carbon tax rates displayed above as its "mid-point" pathway (Climate Leadership Council 2018).

What is Done with the Revenue?

Carbon tax payments become additional government revenue. Like other government resources, no consensus exists on how carbon tax revenue should be spent.

The Deutch proposal's plan for revenue use is simple: divide the revenue into equal portions and send monthly payments to all Americans. The Baker proposal is similar. The other two proposals use the revenue for multiple purposes. The Whitehouse proposal allocates most of the revenue to cut the employee portion of the payroll tax, whereas the Curbelo Proposal allocates most carbon tax revenue to government spending (primarily on transportation infrastructure). Both proposals also allocate funds to protect low-income Americans from energy price increases.

Figure 2: Carbon Tax Revenue Uses in Prominent Federal Proposals



Notes: The Deutch proposal allocates an equal share of rebates to all American adults with a social security number or a tax identification number, with minors receiving a half-share each. A small percentage is also be allocated to administration expenses required to run the program.
The Whitehouse proposal provides American workers with an offset to their payroll taxes equal to the lesser of a $800 refundable tax credit or 6.2 percent of earned income to offset payroll taxes paid, with comparable payments for Social Security and veterans beneficiaries, and at least $10 billion annually in grants to states for a range of purposes, including helping low-income and rural households, workers transitioning to new industries, and communities battling the effects of climate change. Figure 2 assumes that 75% of the revenue is allocated to payroll tax cuts, but the actual amounts could differ significantly.
Under the Curbelo Proposal, 72.6% of revenue is allocated to infrastructure, primarily to the Federal Highway Trust Fund, 16.5% is allocated to vulnerable Americans, including for low-income households and displaced workers, 8.1% is allocated for programs related to climate change adaptation, and 2.3% for programs related to energy research and development (Majkut and Bookbinder 2018).
The Baker Proposal allocation is based on preliminary statements from the Climate Leadership Council that all the proceeds will be returned to the American people on an equal and quarterly basis via dividend checks, direct deposits or contributions to their individual retirement accounts (Baker et al. 2017).

Regulatory Changes

A carbon tax is not a panacea: it will not cover all sources of greenhouse gas emissions, and it does not address non-price-related barriers to reducing emissions, such as underinvestment in R&D and behavioral barriers to energy efficiency. Additional climate policies are warranted. Yet policymakers are also justified in reconsidering the need for and stringency of existing policies with similar or overlapping objectives with a carbon tax.

Therefore, carbon tax proposals commonly include additions, subtractions, or changes to other policies. The Deutch proposal amends the Clean Air Act so that the same sources of greenhouse gas emissions covered by the carbon tax are not subject to separate regulations by the Environmental Protection Agency (EPA). For example, it would suspend regulations of CO_2 emissions from power plans, such as the Trump administration's proposed Affordable Clean Energy Plan that would replace the Obama administration's Clean Power Plan. (The

carbon tax would reduce power plant CO_2 emissions by far more than either of these regulations.) It would also suspend regulations of CO_2 from energy use by industrial sources—EPA has had the authority to regulate these emissions since 2009, but it has not done so. Under the Deutch proposal, if actual emission exceed the emissions targets by 2030, EPA is instructed to impose regulations to fill this emissions gap.

The Deutch proposal carves out an exception for regulations of GHG emissions from vehicles under the Clean Air Act, which could continue. The Clean Air Act would also continue to cover GHG sources not covered by the tax (e.g., methane leaks) and all other non-GHG regulations, and the EPA would retain authorities related to monitoring and reporting of GHGs covered by the tax.

Table 1 shows how these changes compare to the significant additions, subtractions, and changes contemplated in the other carbon tax proposals. The Whitehouse plan is unique among the four proposals in not modifying or eliminating any existing policies. While the Baker proposal has not been finalized, the reports released by the Climate Leadership Council have made various assumptions about regulatory changes that are reflected in the table.

Table 1: Regulatory Changes in the Prominent Federal Carbon Tax Proposals

	Deutch	Whitehouse	Curbelo	Baker *(indications)*
Modifications to existing policies:				
EPA regulations of GHGs from stationary sources covered by the carbon tax	Moratorium[1]	Retained	Moratorium[1]	Eliminated
EPA regulation of motor vehicle GHGs	Retained	Retained	Retained	Retained
EPA regulations of emissions not covered by the tax	Retained	Retained	Retained	Retained
Fuel excise taxes	Retained	Retained	Eliminated	Retained
Payment of state-level carbon prices	Retained	Retained	Temp. credit[2]	Retained
Tort liability for emitters	Retained	Retained	Retained	Eliminated
Policies in addition to the carbon tax:				
HFCs/other flourinated gases	Fee on HFCs	Separate Fee	Contingent[3]	May be added[4]
Methane and other GHGs from fossil fuel production	No	Separate Fee	No	May be added[4]

Notes: The Baker proposal has not released formal legislation; the information above is based on preliminary indications and assumptions made in the reports released by the Climate Leadership Council (Baker et al. 2017, Climate Leadership Council 2018).

[1] Regulations are eliminated as long as emissions targets stipulated in the proposed legislation are achieved.
[2] A temporary and declining credit against any carbon price paid at the state level, as in California or the RGGI states, that phases out after five years.
[3] The carbon tax covers HFC emissions if the United States has not ratified the Kigali Amendment to the Montreal Protocol.
[4] The Climate Leadership Council has indicated that it intends to propose measures that cover non-CO_2 greenhouse gas emissions (Climate Leadership Council 2018).

Impacts on Emissions, Energy Market, and Economic Outcomes

The impacts of a carbon tax on emissions, energy market, and economic outcomes are inherently uncertain: they depend on assumptions about technologies, the evolution of the US energy system and economy, and the response of producers and consumers to the tax. These impacts can be estimated using detailed models of the US energy system and economy that translate CO_2 prices into effects on market prices across the economy and then forecast the extent to which producers and consumers will shift to less carbon-intensive actions due to the price changes.

The Columbia University Center on Global Energy Policy (CGEP) and its partners—Rhodium Group, Rice University, and Urban-Brookings Tax Policy Center—have performed detailed analyses of federal carbon tax scenarios that resemble the Whitehouse and Curbelo proposals, as well as a scenario that assumes all carbon tax revenues are used for equal rebates.[7]

An analysis of the Deutch proposal's impacts on emissions, energy markets, and the economy has not been completed to date. Nevertheless, preliminary and general conclusions can be drawn using the studies released by CGEP and its partners in 2018 and the broader recent literature on federal carbon taxes.[8]

Emissions Impacts

A carbon tax reduces emissions by providing financial incentives to switch to lower-carbon alternatives if doing so costs less than paying the tax. The analyses in Larsen et al. (2018) and Kaufman et al. (2018) projects a range of potential emissions impacts of federal carbon tax proposals that resemble the Whitehouse and Curbelo proposals. Figure 3 displays CO_2 emissions from fossil fuel combustion, a proxy for the emissions covered by the Deutch proposal.

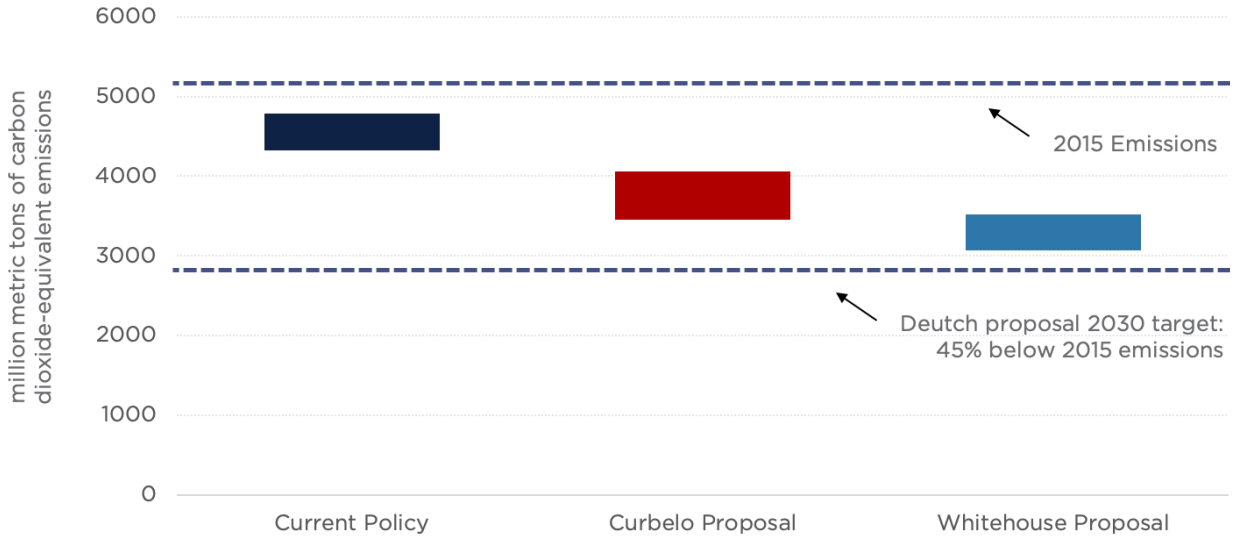
Also displayed in figure 3 is the 2030 emissions target in the Deutch proposal, a 45 percent reduction compared to 2015 emissions levels (equivalent to a 52 percent reduction from 2005 levels). If the Deutch proposal is implemented, this target is likely to be achieved. After all, projected emissions under the Whitehouse proposal bring emissions levels 65 to 90 percent of the way to this 2030 target, and the Deutch Proposal's carbon tax rates are over 60 percent higher (in inflation-adjusted terms) by 2030. In addition, if emissions are not on pace to achieve the target, the Deutch proposal's carbon tax rates increase at $15/ton per year instead of $10/ton, which means the tax rates could be over two times larger than the Whitehouse proposal's tax rates by 2030. Finally, complementary polices could be added that enable further emissions reductions, particularly outside the power sector where the carbon tax achieves relatively few emissions reductions in the 2020s.

Actual emissions could be higher or lower than the projections shown above, and these results should be interpreted with the following considerations in mind:

- Models capture only a subset of technologies and strategies consumers and producers will use to avoid the tax payments;
- Models do not capture the accelerated innovation in low carbon technologies caused by the carbon tax;

- Models assume that consumers and producers respond to the price changes caused by a carbon tax in the same way that they respond to other comparable price changes, but a policy change may be viewed as more visible and permanent than day-to-day price fluctuations;
- Models assume consumers are rational and responsive to price signals, but some consumers will not observe or respond to the price changes caused by the carbon tax;
- The carbon tax scenarios displayed above assume that a carbon tax is the only policy layered on top of a current policy scenario.

Figure 3: Carbon dioxide Emissions from Fossil Fuel Combustion in 2030



Notes: For each scenario, the higher ends of the emissions ranges reflect assumptions of relatively rapid progress in clean energy technologies, while the lower ends of the ranges reflect slower progress. The Current policy and Whitehouse proposal scenarios are from modeling undertaken in Larsen et al. (2018). The Curbelo proposal scenario is from modeling undertaken in Kaufman et al. (2018).

The long-term goal of the Deutch proposal is to reduce US emissions by 80 to 90 percent below 2015 levels by 2050. The carbon tax rates needed to achieve these long-term targets are unknown because they depend on highly uncertain factors such as economic growth, technological progress and policy developments.

The analysis underlying the US Mid-Century Strategy for Deep Decarbonization (White House 2016) indicates that the carbon tax rates in the Deutch proposals are likely to be sufficient to put the country on a pathway to achieve reductions of 80 percent or more by 2050 under the assumptions that progress in carbon-free technologies continues a rapid pace and effective policies are layered on top of a carbon tax, particularly in sectors in which producers and consumers are less responsive to price signals. In the event the Deutch proposal's carbon tax

rates are insufficient, the legislation instructs EPA to impose regulations that enable the long-term emissions targets to be achieved.

Additional Government Revenues

How much revenue the federal government will receive from payments of the carbon tax depends on the carbon tax rates, the activities that are taxed, and how producers and consumers respond to the tax, among other factors.

A carbon tax also affects other sources of government revenue by leaving individuals and businesses with less income to pay other taxes and causing economic activity to shift to sectors taxed at different rates. Empirical estimates suggest these additional effects are likely to reduce the net additional revenue from a carbon tax, perhaps by as much as a quarter of the carbon tax payments.[9]

With tax rates that increase at 2 percent per year, as in the Whitehouse and Curbelo proposals, additional government revenues over the first decade are roughly flat: the increasing annual carbon tax rates push revenue up over time by approximately the same amount that the decrease in annual emissions pushes revenues down. Under the Whitehouse proposal, annual federal government revenue increases by about $160 billion to $190 billion, while the revenue increase under the Curbelo proposal is much lower due to the lower tax rates and the repeal of the fuel excise taxes—perhaps $55 billion to $70 billion annually.

Under the Deutch proposal, carbon tax rates start low and increase much more rapidly than under the other plans, which would imply rapidly increasing annual carbon tax revenues in the 2020s. Eventually, as US emissions decline, annual revenues from the carbon tax will peak and then start to fall.

A detailed analysis of a carbon tax scenario with the Deutch proposal's tax rates is needed for reliable estimates of annual revenues under the policy. Analysis in Larsen et al. (2018) of scenarios with similar tax rates to the Deutch proposal suggest that carbon tax revenues (not accounting for other changes in government revenue) could be around $80 billion in the first year of implementation, $180 billion by the fourth year, and $330 billion by the ninth year. Assuming equal payments to 130 million US households, those carbon tax revenues would imply (taxable) rebates of about $600, $1,400, and $2,600 for each household in the first, fourth, and ninth years of policy implementation.

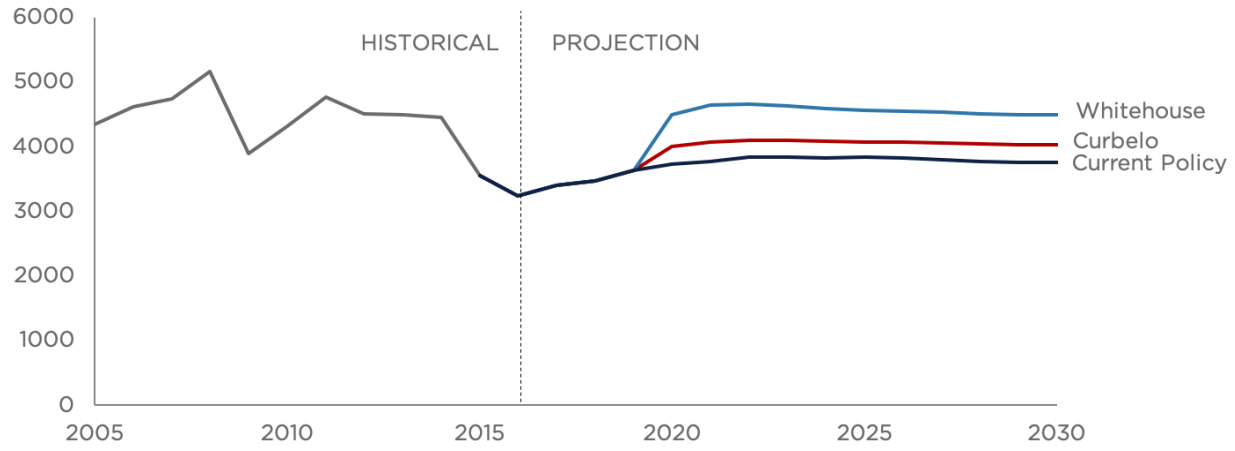
Changes in Energy Expenditures

A carbon tax increases energy costs in proportion to the carbon content of the source of energy: impacts are most significant for energy produced with coal, then petroleum, then natural gas. Higher carbon tax rates cause larger changes in energy prices.

Figure 4 shows the projected changes in per capita energy expenditures under carbon tax scenarios resembling the Whitehouse and Curbelo proposals compared to historic levels and projections under current policies. The Deutch proposal's carbon tax rates are similar to those in Whitehouse proposal in 2023 and 2024, which might imply similar per capita energy expenditure increases of $750–$800 in these years (although the different tax rate trajectory

could imply significantly different impacts). Impacts will increase in later years as the carbon tax rates rise, at which point households will also receive larger rebate checks.

Figure 4: Per Capita Energy Expenditures



Notes: All scenarios use the more pessimistic of two inputs assumptions used for the progress of clean energy technologies (i.e. they correspond to the higher ends of the emissions ranges displayed in Figure 3). The Current Policy and Whitehouse proposal scenarios are from modeling undertaken in Larsen et al. (2018). The Curbelo proposal scenario is from modeling undertaken in Kaufman et al. (2018).

Such price changes would cause shifts in energy production and consumption. Coal production falls precipitously by 2030 compared to the current policy scenario, by about 45 and 80 percent in the Curbelo and Whitehouse proposals, respectively. Both proposals significantly accelerate the pace of deployment of renewable energy sources like solar and wind; nuclear energy and carbon capture and storage technologies benefit from the carbon taxes as well. Both proposals cause US natural gas production to experience small increases in 2020 but small decreases below current policy levels by 2030 (Larsen et al. 2018). Given its higher carbon tax rates, the Deutch proposal's impacts on each of these markets would be larger by 2030.

The studies of the Whitehouse and Curbelo proposals show that the changes to energy markets occur disproportionately in the power sector, which is responsible for over two-thirds of the emissions reductions in the 2020s, with only small changes to the direct use of fossil fuels in the transportation, buildings, and industrial sectors. Detailed analysis is needed to understand the extent to which the higher carbon tax rates contemplated by the Deutch proposal would change these findings, if at all.

Impacts across the Income Distribution

The Deutch proposal is a highly progressive policy. The carbon tax is paid disproportionately by high-income households that consume a disproportionate amount of the country's carbon-intensive products and own most of the carbon-intensive energy production. With the tax revenues distributed equally under the Deutch proposal, the rebates received by average low- and

middle-income households will exceed their increased expenditures caused by the carbon tax.

Recent studies of other carbon tax-and-rebate policies show that average households in the bottom six to eight deciles of the income distribution may see reduced tax burdens and/or welfare gains (Rosenburg et al. 2018, Diamond and Zodrow 2018). In contrast, the households in the highest income deciles are worse off due to the tax, although these studies do not account for the benefits of reduced emissions.

In contrast, the Whitehouse and Curbelo proposals are neither progressive nor regressive policies—compared to the Deutch proposal, they are likely to have more even impacts across the income distribution. Both proposals designate a portion of the carbon tax revenue to low-income households to offset the adverse impacts of higher energy prices. Under the Curbelo Proposal, 10 percent of the carbon tax revenue is directed to households in the bottom 20 percent of the income distribution; Kaufman et al. (2018) show that these payments are sufficient to fully offset the effects for the vast majority of these low-income households.

Macroeconomic Impacts

A carbon tax leads to better economic outcomes than policies that focus on specific sectors, regions or technologies because the carbon tax encourages low-cost emissions reductions and low-carbon innovation across the economy. Still, a carbon tax raises prices throughout the economy, which adversely affects economic growth. Expenditures of the carbon tax revenues push the economy in the opposite direction, putting more income in the pockets of Americans or providing them with additional government services. Reducing emissions will also boost the economy by avoiding adverse impacts associated with air pollution and climate change (particularly in the long run, assuming global action).

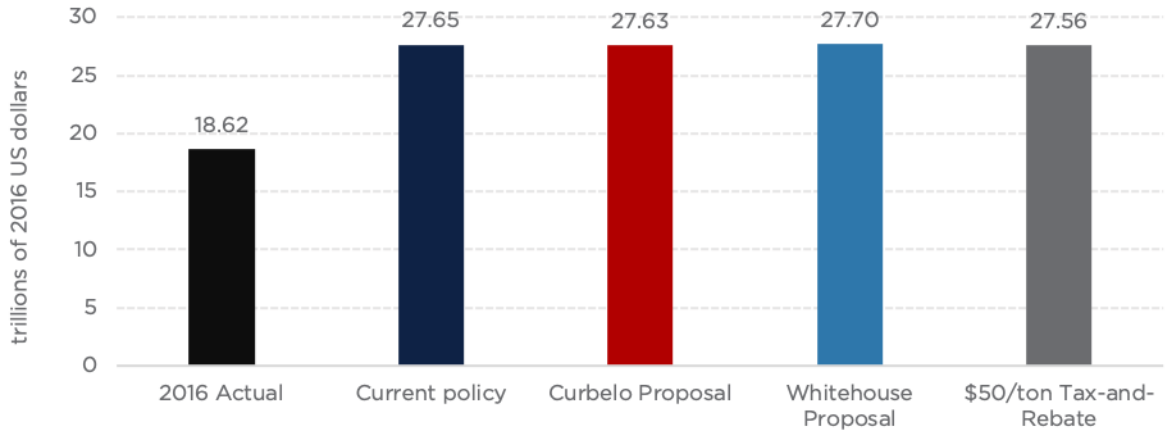
Projections of future macroeconomic economic outcomes are highly uncertain, and no study has estimated the macroeconomic impacts of the Deutch proposal. However, studies of other carbon tax proposals (Diamond and Zodrow 2018, Kaufman et al. 2018) have estimated the likely impacts on macroeconomic outcomes like gross domestic product (GDP).

Figure 5 shows estimates of US GDP after 10 years under scenarios resembling the Curbelo and Whitehouse proposals, a third carbon tax scenario in which all revenues are used for equal rebates (though with a tax rate trajectory that corresponds to the Whitehouse proposal as opposed to the Deutch proposal), and a current policy scenario. Under all scenarios, GDP falls within a range of about half of one percentage point after 10 years of policy implementation. These estimates do not account for any economic benefits of emissions reductions.

In figure 5, GDP is lowest after 10 years in the scenario in which revenues are used for rebates, as in the Deutch proposal. That's because sending checks to Americans sacrifices the opportunity to allocate revenues in ways designed to boost the economy, such as reducing taxes on work (as in the Whitehouse Proposal) or targeted government investments (as in the Curbelo Proposal). However, the economic model does not account for any potential benefits of reduced income inequality caused by a highly progressive policy or the larger benefits of pollution reductions due to the higher carbon tax rates of the Deutch proposal.

The near-term economic outcomes of a policy should not be confused with its net benefits. First, GDP and other economic metrics are poor indicators of social welfare, which include factors unrelated to how much money we make and spend. GDP impacts do not account for environmental degradation or natural resource depletion, for example. Second, these metrics do not capture the health or economic benefits associated with reduced air pollution and climate change.

Figure 5: US Gross Domestic Product after 10 Years of a Carbon Tax



Notes: Values exclude any impacts of emissions reductions on gross domestic product.
The Current policy, Whitehouse proposal and $50/ton tax-and-rebate scenarios are from modeling undertaken in Larsen et al. (2018).
The Whitehouse proposal scenario assumes all revenues are allocated to payroll tax reductions, whereas the actual Whitehouse proposal includes a carve-out for transfers to vulnerable Americans.
The Curbelo proposal scenario is from modeling undertaken in Kaufman et al. (2018).

Conclusion

Congress is unlikely to pass the Deutch proposal in 2019. If it did, US greenhouse gas emissions would fall dramatically in the 2020s, well beyond the pace of reductions outlined by the United States in its Nationally Determined Contribution to the 2015 Paris climate agreement. Combined with other effective policies, the Deutch proposal or a similar carbon tax would put the country on a pathway to a low carbon economy by midcentury or sooner.

The Deutch proposal would also increase the cost of energy for Americans and provide them with a rebate check each month. The carbon tax rates contemplated in the Deutch proposal are noticeably higher than under previous federal carbon tax proposals, rising near $100/ton by 2030 or beyond, depending on emissions outcomes. Detailed analysis is needed to understand the likely impacts of these carbon tax rates on energy market and economic outcomes.

Additional important factors are outside the scope of this paper. Those include the geographic distribution of impacts across the country, particularly on coal-dependent communities that

would be hardest hit. It also excludes important political considerations, including whether the structure of the Deutch proposal will enable greater or less support than other carbon tax policies.

References

American Opportunity Carbon Fee Act of 2018. S. 2368, 115th Congress (2017–2018). https://www.congress.gov/bill/115th-congress/senate-bill/2368.

Bordoff, Jason, and John Larsen. "US Carbon Tax Design: Options and Implications." Columbia SIPA Center on Global Energy Policy. January 2018. https://energypolicy.columbia.edu/research/report/us-carbon-tax-design-options-and-implications.

Baker III, James A. et al. "The Conservative Case for Climate Dividends." Climate Leadership Council. February 2017. https://www.clcouncil.org/media/TheConservativeCaseforCarbonDividends.pdf.

Citizens' Climate Lobby. "Legislative Proposal: Carbon Fee and Dividend." July 2016. https://11bup83sxdss1xze1i3lpol4-wpengine.netdna-ssl.com/wp-content/uploads/2016/10/Carbon-Fee-and-Dividend-July-2016.pdf.

Climate Leadership Council. "Exceeding Paris: How The Baker-Shultz Carbon Dividends Plan Would Significantly Exceed the U.S. Paris Commitment." September 2018. https://www.clcouncil.org/media/Exceeding-Paris.pdf.

Diamond, John, and George Zodrow. "The Effects of Carbon Tax Policies on the US Economy and the Welfare of Households." Baker Institute for Public Policy at Rice University for Columbia SIPA Center on Global Energy Policy. July 2018. http://energypolicy.columbia.edu/ourwork/topics/climatechange-environment/carbon-tax-researchinitiative/carbon-tax-initiative-research.

Energy Innovation and Carbon Dividend Act of 2018. H.R.7173. 115th Congress (2017-2018). https://www.congress.gov/bill/115th-congress/house-bill/7173/text.

High-Level Commission on Carbon Prices. "Report of the High-Level Commission on Carbon Prices." 2017. https://static1.squarespace.com/static/54ff9c5ce4b0a53decccfb4c/t/59b7f2409f8dce5316811916/1505227332748/CarbonPricing_FullReport.pdf.

Larsen, John, Shashank Mohan, Whitney Herndon, and Peter Marsters. "Energy and Environmental Implications of a Carbon Tax in the United States." Rhodium Group for Columbia SIPA Center on Global Energy Policy. July 2018. http://energypolicy.columbia.edu/our-work/topics/climate-change-environment/ carbon-tax-research-initiative/carbon-tax-initiative-research.

Kaufman, Noah, and Kate Gordon. "The Energy, Economic and Emissions Impacts of a Federal US Carbon Tax." Columbia SIPA Center on Global Energy Policy. July 2018. https://energypolicy.columbia.edu/research/report/energy-economic-and-emissions-impacts-federal-us-carbon-tax.

Kaufman, Noah, John Larsen, Shashank Mohan, Whitney Herndon, Peter Marsters, John

Diamond and George Zodrow. "Emissions, Energy, and Economic Implications of the Curbelo Carbon Tax Proposal." Columbia SIPA Center on Global Energy Policy. July 2018. https://energypolicy.columbia.edu/research/report/emissions-energy-and-economic-implications-curbelo-carbon-tax-proposal.

Kaufman, Noah. "Putting a Price on Vehicle Emissions Is Better Policy Than It Seems." Columbia SIPA Center on Global Energy Policy. August 2018. https://energypolicy.columbia.edu/research/commentary/putting-price-vehicle-emissions-better-policy-it-seems.

Kaufman, Noah, Eleanor Krause, and Kehan DeSousa. "Achieving U.S. Emissions Targets with a Carbon Tax." World Resources Institute. June 2018. https://www.wri.org/publication/us-emission-targets-with-carbon-tax.

Majkut, Joseph and David Bookbinder. "The MARKET CHOICE Act: A Legislative Analysis from the Niskanen Center." Niskanen Center Policy Brief. July 2018. https://niskanencenter.org/blog/legislative-analysis-the-market-choice-act/.

Market Choice Act, H.R. 6463, 115th Congress (2017–2018). https://www.congress.gov/bill/115th-congress/house-bill/6463.

Rosenberg, Joseph, Eric Toder, and Chenxi Lu. "Distributional Effects of Taxing Carbon." Tax Policy Center for Columbia SIPA Center on Global Energy Policy. July 2018. http://energypolicy.columbia.edu/our-work/ topics/climate-change-environment/carbon-tax-research-initiative/carbon-tax-initiative-research.

The White House. "Mid-Century Strategy for Deep Decarbonization." Washington D.C. 2016.

Notes

1. Representative Curbelo lost his seat in Congress in the November 2018 election, but cosponsors have indicated they will continue to push for the legislation in the next Congress.

2. The Climate Leadership Council added to its list of prominent supporters (https://www.clcouncil.org/founding-members/), including former Federal Reserve Chair Janet Yellen. In October, Exxon announced it was giving $1 million over two years to a group that would lobby for the Baker proposal.

3. "Virtually all" because, for example, the Deutch Proposal exempts CO_2 emissions from energy use by farm equipment and from US territories.

4. Net emissions are calculated by taking all sources of GHG emissions (gross emissions) and subtracting the carbon dioxide that is absorbed by US lands (i.e., the "land sink").

5. The three other proposals would cover CO_2 emissions from industrial processes (e.g., cement production), which account for about 2 percent of total emissions. The Whitehouse proposal includes a separate fee on HFC emissions and a supplementary fee on emitters to account for methane emissions from venting, carbon dioxide from flaring, and other greenhouse gas

emissions that escape throughout fossil fuel supply chains. The Curbelo proposal covers emissions from certain sources of biomass and covers HFC emissions only if the United States does not ratify the Kigali Amendment to the Montreal Protocol.

6. The Deutch proposal is designed to qualify under the WTO rules, going as far as to borrow language from the WTO regarding acceptable exemptions when describing the purpose of the BCA in the legislation: "To protect animal, plant, and human life and health, to conserve exhaustible natural resources by preventing carbon leakage, and to facilitate the creation of international agreements."

7. These studies are available at the website of Columbia University's Center on Global Energy Policy's Carbon Tax Research Initiative at https://energypolicy.columbia.edu/carbontax.

8. For example, Stanford Energy Modeling Forum 32 is a model inter-comparison exercise focusing on the impacts of a federal carbon tax in the United States, published in a special edition of the journal Climate Change Economics in February 2018 (https://www.worldscientific.com/toc/cce/09/01).

9. However, recent modeling by scholars at Rice University finds that this offset to government revenue may be considerably smaller than other studies have suggested, due to a shift in economic activity to higher-taxed sectors caused by the carbon tax (Kaufman et al. 2018).

About the Author

Noah Kaufman is a research scholar and director of the Carbon Tax Research Initiative at the Columbia SIPA Center on Global Energy Policy. He is an economist who has previously worked at the White House Council on Environmental Quality, World Resources Institute and NERA Economic Consulting.

Acknowledgments

The authors would like to acknowledge helpful comments from Matthew Robinson and Hao Wang on earlier drafts.

The opinions expressed in this paper are those of the authors and should not be construed as reflecting the views of the Columbia SIPA Center for Global Energy Policy or any other entity.

This working paper was developed in response to a Congressional proposal, using information described in reports prepared for CGEP Carbon Tax Research Initiative, which are available on CGEP's website. Unlike the CGEP Carbon Tax Research Initiative reports, given the relatively short timeframe available to conduct this analysis, this working paper has not been subject to CGEP's formal expert review process.

This work was made possible by support from the Center on Global Energy Policy. More information is available at http://energypolicy.columbia.edu/about/mission.

ABOUT THE CENTER ON GLOBAL ENERGY POLICY

The Center on Global Energy Policy provides independent, balanced, data-driven analysis to help policymakers navigate the complex world of energy. We approach energy as an economic, security, and environmental concern. And we draw on the resources of a world-class institution, faculty with real-world experience, and a location in the world's finance and media capital.

Visit us at www.energypolicy.columbia.edu

@ColumbiaUenergy

ABOUT THE SCHOOL OF INTERNATIONAL AND PUBLIC AFFAIRS

SIPA's mission is to empower people to serve the global public interest. Our goal is to foster economic growth, sustainable development, social progress, and democratic governance by educating public policy professionals, producing policy-related research, and conveying the results to the world. Based in New York City, with a student body that is 50 percent international and educational partners in cities around the world, SIPA is the most global of public policy schools,

For more information, please visit www.sipa.columbia.edu

RESOLUTION NO. 2016-34

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LOS ALTOS ENDORSING THE CARBON FEE AND DIVIDEND LEGISLATION PROPOSED BY THE CITIZENS' CLIMATE LOBBY

WHEREAS, the City Council recognizes the importance of protecting the environment and reducing greenhouse gas emissions; and

WHEREAS, on December 10, 2013, the City Council adopted the Los Altos Climate Action Plan which set measures to reduce greenhouse gas emissions within the City; and

WHEREAS, the City Council recognizes the need to reduce carbon emissions.

NOW THEREFORE, BE IT RESOLVED, that the City Council of the City of Los Altos hereby endorses the Carbon Fee and Dividend legislation proposed by the Citizens' Climate Lobby and encourages members of Congress to support Carbon Fee and Dividend as a key element in reducing the risks of climate change.

I HEREBY CERTIFY that the foregoing is a true and correct copy of a Resolution passed and adopted by the City Council of the City of Los Altos at a meeting thereof on the 25th day of October, 2016 by the following vote:

AYES:	BRUINS, MORDO, PEPPER, PROCHNOW, SATTERLEE
NOES:	NONE
ABSENT:	NONE
ABSTAIN:	NONE

Jeannie Bruins, MAYOR

Attest:

Jon Maginot, CMC, CITY CLERK

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LOS ALTOS URGING THE UNITED STATES CONGRESS TO ENACT THE ENERGY INNOVATION AND CARBON DIVIDEND ACT OF 2021

WHEREAS, the Los Altos City Council recognizes the importance of reducing greenhouse gas emissions; and

WHEREAS, the city of Los Altos is threatened by climate change impacts such as wildfire smoke and extreme weather events; and

WHEREAS, Los Altos, while having a Climate Action Plan, recognizes the need for national legislation to leverage what the City is doing and coordinate private, municipal, state and federal actions across the country; and

WHEREAS, the Energy Innovation and Carbon Dividend Act of 2021 fulfills the Los Altos City Council's endorsement of a Carbon Fee and Dividend and request for members of Congress to support a Carbon Fee and Dividend, unanimously adopted in Resolution 2016-34 on October 25, 2016.

NOW, THEREFORE, BE IT RESOLVED that the Los Altos City Council urges Congress to enact without delay the Energy Innovation and Carbon Dividend Act of 2021;

BE IT FURTHER RESOLVED, that copies of this resolution shall be sent to Representative Eshoo and Senators Feinstein and Padilla.