Explanation

of

America First, Comprehensive, Worldwide, Fossil Fuel Tax Act

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[1] Mr. Convisser has been running POP Diesel since 2008 and served as General Counsel until 2018. The first company to win U.S. EPA approval to sell straight vegetable oil as fuel to power diesel engines (in 2013), POP Diesel compelled Mr. Convisser to interact intimately with the petroleum and renewable fuel industries, EPA, and other federal and state agencies on all sorts of matters. Because the Company's products fall outside the box of existing regulations and statute, he has been forced to think of new and original policy angles. Collectively, these are embodied in AFCWFFT. In good faith, POP Diesel has tried all avenues to reform the existing framework of laws and regulations, including meeting repeatedly with, petitioning, and even suing EPA, ASTM International's Petroleum Products Committee, and ExxonMobil, to no avail. POP Diesel conferred widely with whichever interest groups were available in drafting this Act.

Mr. Convisser is a graduate of ASTM International's course on Diesel Fuels: Standards and Specifications. He served as an active member of ASTM's Petroleum Products Committee that sets nationwide fuel standards for three years. He is a certificated graduate of the Society of Automotive Engineers' Diesel Engine Emissions Engineering Academy and is the primary inventor of a patent held by POP Diesel on engine controls for a multi-fuel diesel engine, one of which fuels is plant oil. He worked briefly in the Air Section of EPA's General Counsel's Office. He is a permaculture consultant certified by the Traditional Native America Farmers Association and farmed an alfalfa-grass mix for four years. He first lobbied Congress professionally in 1987 and ran a diverse litigation law practice for 10 years. He earned a B.A. from Harvard College and J.D. from the University of Virginia School of Law, both with honors. POP Diesel Africa Limited will plant 6 million jatropha trees in northern Ghana in 2019 and 42 million in 2020, taking off exponentially from there.

POP Diesel Board member Harry D. Saunders, Ph.D. contributed on carbon mole fraction and broader issues of the energy market. An energy economist, Dr. Saunders is a Contributing Author to the Intergovernmental Panel on Climate Change and a Senior Fellow at the Breakthrough Institute. He has lectured in Stanford's economics department and published many scholarly articles in the field of energy economics. As Managing Director of Decision Processes Incorporated, Dr. Saunders has advised Fortune 500 companies, including Chevron, General Motors, Disney and Hewlett Packard. His Ph.D. is from Stanford in Engineering-Economic Systems , his M.Sc. from the University of Calgary in Resources, the Environment, and Planning, and B.Sc. from the U. of Alberta in Physics, with honors.

This memorandum assumes that the reader is familiar with a separate, 4-page summary of the principles underlying the America First, Comprehensive, Worldwide, Fossil Fuel Tax Act ("AFCWFFT"[2] or "the Act"). Because this Act differs dramatically from incremental bills presently circulating and contemplated by the Washington policy community, and it was drafted fresh from the ground up to the sky, its strategy and novel provisions benefit from the following, detailed explanation.

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[2] A mnemonic device for this acronym is the famous line in John F. Kennedy's inaugural address: "Ask not what your country can do for you. AFCWFFT you can do for your country."

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PART I. STRATEGY

1. Why Not Solve the Problem, Rather Than Adopt a Half-Measure That Is Bound to Fall Short?

Since contentious legislation will require 60 votes in the Senate, incremental reform of failing climate change policies is likely to incur as much political opposition as adopting a new paradigm that sets up a gradual, yet certain, complete and timely break from fossil fuels.

The radical bargain set forth in AFCWFFT is to do exactly what conservatives always say will be a necessary corollary to a carbon tax, in exchange for accomplishing a goal that environmentalists seek. In enshrining into statute a framework for a complete and certain termination of fossil fuel use by the year 2050, there is no reason to maintain any of EPA's regulatory authority over carbon dioxide pollution. Therefore, end it and all state, federal and international regimes, including cap-and-trade, credits and subsidies, that purport to address the problem by other means. In other words, end all policy incentives that impair the most efficient operation of a worldwide fossil fuel tax.

Democrats tend to abide by the misguided notion, embodied in some progresssives' call for a Green New Deal, that governmental investments, subsidies, tax credits, and regulations favoring specific fuels, enabling technologies, and infrastructure help to spur a faster transition from fossil to renewable fuels. While the urge to help is understandable, as is explained below in detail in Section 7(c) and (d), instead, these policies serve mainly to entrench fossil fuels and those less-than-desirable renewable fuels that blend in subordination to fossil fuels and thereby serve fossil fuel interests, at the expense of excluding optimal solutions. Our country has had decades of these sorts of policies, which may have aided some beneficiaries in their start-up years; yet we are far from accomplishing the necessary transition. AFCWFFT represents a break from these policies that have outlived their benefit and that now inhibit the free market and the four-fifths of the economy resting in private hands, as influenced by an economy-wide fossil fuel tax, from solving the problem by private finance and investment.

Eliminating reams of specific federal regulations requires the replacement law to include a higher level of detail than is typical for an environmental statute. This detail is to avoid the need for new agency rulemakings, like those in the past, as discussed below in Sections 7(c) and 7(d), that became captured by opponents of the enabling statute, thereby undermining Congressional intent and defeating the law's very purpose. An example of a regulation that everyone mistakenly assumes is helpful towards combating global warming, discussed below, is the CAFE fuel economy standards for cars, which actually serve to disincentivize engine manufacturers from building new engines to run on low-carbon fuels.

An example of detailed language proposed in AFCWFFT that obviates the need for agency rule-making is the definition of "**FOSSIL FUEL NET GREENHOUSE GAS EMISSIONS REPLACEMENT VALUE OF BIOMASS**," appearing at **PAGE 7** of the AFCWFFT text. This detailed definition succinctly states a decision tree for the tax level, if any, to apply to all biomass grown worldwide. It serves to replace the Renewable Fuel Standard, which has fallen well short of its original ambition. It also replaces idiosyncratic regulation of biomass in all other countries with a single standard that can apply across borders and in both tropical and temperate ecosystems.

The break with fossil fuels is certain and complete for three reasons. First, the Act sets a specific schedule for the price of carbon, including annual increases above the rate of inflation, for every year leading to 2050. From $36 per metric ton of carbon dioxide in 2020, which is the equivalent of a $0.36 per gallon tax on gasoline, the tax increases to the equivalent of $1.01 per gallon in 2030, $4.66 per gallon in 2040, and $100 per gallon in 2050, or $10,013 per metric ton of carbon dioxide pollution in constant, 2018 dollars, remembering that 2050 is the year that the Act sets for ending fossil fuel emissions. Second, an accelerating pace of increases in the price of carbon will impose more and more deterrence on the purchase of new equipment or capital that runs on any fossil fuel. As older equipment dependent on fossil fuels retires, net carbon emissions will peter out. Third, the Act does not leave any door open to abandon or weaken this schedule and these tax rates by way of Congressional re-authorization or agency audit.

However, only a comprehensive measure applying and enforceable *world-wide* will actually solve the problem. The America First, worldwide, enforcement features are discussed in Section 3 below.

Petroleum now accounts for 45 percent of the United States' greenhouse gas contribution, as compared to coal's 26 percent and natural gas's 29 percent. https://www.eia.gov/tools/faqs/faq.php?id=79&t=11. This memorandum includes insight on the petroleum industry's tactics gleaned from POP Diesel's interactions at the industry and policy level over the last dozen years. An effective carbon tax package must target petroleum and fortify against the end-runs that the petroleum industry will try to make.

2. Tax the Emission of Greenhouse Gases in Proportion to the Energy Source's Relative Harm

If the "invisible hand" of the free market (in Adam Smith's words) is to be empowered to solve the problem of global warming, then energy should be taxed or not-taxed at a rate the corresponds with its relative harm or benefit. In addition, those goods that embody more fossil fuel emissions in their manufacture than others should also pay correspondingly more of the tax.

Two variables can set the proper incentives. These are, first, imposing the tax at the point of a fossil fuel's origin, rather than as it leaves the refinery, and second, using carbon mole fraction of the energy source to calibrate the tax's gravity. Section 1(c) states the definitions of 27 terms used in AFCWFFT in alphabetical order, including "**POINT OF EXTRACTION" (AT PAGE 11), "POINT OF IMPORTATION" (AT PAGE 11),** and **"MOLE FRACTION" (AT PAGE 9)**.

a. Tax Upstream, Rather Than Downstream

The most important reason for taxing upstream at the source of energy, rather than downstream after it has been refined, is that there is a handy and universal formula that can apply there to all different kinds of energy that obviates the need for complicated and potentially distorting agency rulemaking and permits immediate, uniform, worldwide implementation. The formula is the carbon mole fraction of the energy source, discussed in subsection 2(b) below, a surrogate for carbon intensity, which can be determined simply by sending a sample of the energy source to a laboratory for analysis.

Imposing the fossil fuel tax upstream at the well head and mine mouth, rather than downstream at a fossil fuel refinery, easily permits calibration of the tax to the energy source, rather than the refined end product, without need for a rulemaking to determine life cycle greenhouse gas emissions downstream at the refinery. This kind of rulemaking could be subject to influence of, and subversion by, the fossil fuel industry.

Imposing the tax upstream at the energy source is useful in penalizing fuel extraction, transport and refining that uses crude fossil fuels that would escape a downstream tax. The best example is oil sands, whose bitumen is often mixed with natural gas condensate to reduce viscosity for pipeline transport to the refinery. Natural gas condensate is a liquid present in raw natural gas produced from many natural gas fields. If diverted at its point of extraction to blend with oil sands bitumen and the tax is imposed later, it avoids the tax in its own right, thus preventing the tax from weighing proportionately as it should on the refined end product from oil sands bitumen.

The latest carbon tax bill, the bipartisan Energy Innovation and Carbon Dividend Act, introduced by Congressmen Ted Deutch (D, FL), Francis Rooney (R, FL), John Delaney (D, MD), Brian Fitzpatrick (R, PA), and Charlie Crist (D, FL), mistakenly claims to impose the tax upstream, which it would do only for coal. It imposes the tax on petroleum at the refinery. Rather than imposing the tax on natural gas at the well head, it imposes it at the point of entry of "pipeline quality natural gas into the natural gas transmission system." This language exempts natural gas condensate from being subject to the tax, since as a liquid, it never enters the natural gas transmission system. It would permit the liquid natural gas condensate to be collected untaxed at the well head and then transported for blending with bitumen derived from oil sands, thus lowering the tax's burden on both natural gas and oil sands extraction unjustifiably.

If the tax is calibrated at the point of origin, then the tax will have the highest likelihood of influencing producers to make the most optimal decisions about whether to exploit the particular source and bring it to market, or not. It will influence consumers by weighing more heavily on fossil fuels sources coming from more impractical or wasteful sources. For instance, the final fuel refined from bitumen in western Canadian oil sands will include a higher proportion of the tax per unit of delivered energy by virtue of the carbon mole fraction measurement than will West Texas Intermediate crude oil, a cleaner source of petroleum.

Taxing at the well head and mine mouth is easy to administer, as most states with mineral resources already impose their own franchise tax at the point of extraction. A federal overlay on this existing state tax structure will not be burdensome.

The disadvantage of taxing upstream is not really a disadvantage at all. Fossil fuels that are not combusted into the atmosphere, but are instead, for instance, turned into plastics, suffer payment of the tax oriented to emissions. 100 percent renewable vegetable oil is a hydrocarbon oil, just as crude petroleum is. It can be turned into any and every product that petroleum is currently used to make, including all kinds of plastics. Vegetable oil from all sources is capable of replacing mineral oil in all respects. Allowing a credit for petroleum processed into solids forms like plastic enters the world of use (as compared to capture and storage) of greenhouse gas emissions that AFCWFFT eschews, as discussed in Section 7(d)(4) below.

b. Carbon Mole Fraction
Measures an Energy Source's Carbon Intensity and Emissions

Mole fraction is the share of the mass of a molecule comprised of a particular element or atom. **"MOLE FRACTION"** is defined **AT PAGE 9**. For instance, a water molecule consists of two atoms of hydrogen and one atom of oxygen. The mole fraction of oxygen in water is the mass of one atom of oxygen divided by the sum total of the mass of two atoms of hydrogen plus one atom of oxygen.

The carbon mole fraction of an energy source measures the share of carbon in it. Using it as the tax measuring stick essentially means taxing every atom of carbon that man delivers to the atmosphere in the same way. It is a valuable surrogate for the carbon polluting character of energy upon combustion for the following reasons:

i. This number will vary from energy source to energy source according to the carbon intensity and carbon emissions performance of each source.

ii. Since carbon mole fraction can be measured at the energy source's point of origin (the well head, mine mouth, or in the case of biomass, cultivation land), it dovetails with upstream, rather than downstream, levying of the tax.

iii. It avoids the need for complicated and questionable agency rulemakings to implement and downstream carbon tax comparing life cycle greenhouse gas emissions from different refining processes and energy sources.

iv. Carbon mole fraction is amenable to measuring carbon pollution in a uniform way worldwide.

Per unit of energy in the fuel, coal has a higher carbon mole fraction than petroleum (i.e., it emits more carbon dioxide per unit of energy combusted) and petroleum has a higher carbon mole fraction than natural gas. In this way, carbon mole fraction as the measuring stick for relative tax burden will favor use of the less carbon-polluting sources, across the board.

Measuring the carbon mole fraction is easy to do from a sample drawn at the fuel's point of origin and sent off to a laboratory. It is a handy tool for comparing the relative pollution and energy content merits of fossil fuel and biomass sources. This single measure permits a standard practice worldwide, easy way to track compliance, and uniform enforcement globally.

The **CARBON MOLE FRACTION OF CARBON DIOXIDE** is 0.2727 **(AT PAGE 5)**. The inverse of this number, 3.667, is used in the algebraic formula calculating the **ANNUAL TAX RATE (AT PAGE 3)** that applies to a particular source of combustible fuel, according to its carbon mole fraction measured from a sample taken at the point of extraction (for fossil fuel) or the point of harvest (for biomass).

The definition of the **ANNUAL TAX RATE (AT PAGE 3)** further specifies where representative samples of biomass and oil sands are to be drawn for testing of their carbon mole fraction and how the sample is to be prepared. The basic idea is that the energy source is tested for its carbon mole fraction at the earliest point that a specimen can be drawn, so that the energy expended in transporting and refining it from there will be captured by the tax.

3. The Price of Carbon

Some environmentalists, such the Environmental Defense Fund ("EDF"), have reservations about a carbon tax because they say it does not guarantee a rate of greenhouse gas emissions reduction such as would be certain by an alternative, cap-and-trade program. The discussion below in Section 8 of "Environmental Integrity Mechanisms" ("EIM"), favored by EDF, addresses these reservations.

However, there is simple way to construct a pure fossil fuel tax without resort to an EIM or other fallback so as to guarantee attainment of the desired goal: set the price of greenhouse gas

pollution by the desired date at such a high point, at the theoretical price of infinity, that it will absolutely dissuade anyone from consuming fossil fuels by that date. Work backwards from that date to state in the law a clear and certain tax rate for every year from now until then.

If the goal is, as EDF supports, zero net carbon emissions by mid-Century, then setting the price of carbon pollution at infinity in the year 2050 will achieve zero net carbon emissions by that date. Of course, it is not possible in reality to have a price of carbon equaling the number infinity. Instead, we have to settle on a dollar value for a price on carbon pollution that in people's minds will be the same as "infinity," and to work backwards from there. AFCWFFT sets the price per metric ton of carbon dioxide pollution as $10,013 in 2050, which is the carbon dioxide emissions equivalent of a gasoline tax of $100 per gallon in constant, 2018 dollars.

Please note that this tax equivalent, if set lower, at say, $10 per gallon of gasoline in 2050, would dissuade the purchase of all motor vehicles running on gasoline by that year. However, the point, discussed below, is to incentivize the purchase of equipment running on renewable fuel in the years leading up to 2050, if there are to be no fossil fuel emissions by that year.

AFCWFFT proposes to start the fossil fuel tax on January 1, 2020 at the price that the U.S. Department of Energy determined is, and the Office of Management and Budget formerly determined was the social cost of carbon pollution: $36 per metric ton, equating to a gasoline tax of $0.36 per gallon. Note that others have estimated the social cost of greenhouse gas pollution to be in the hundreds of dollars per metric ton of carbon dioxide.

a. A Legislative Signal to the Market Prompting People to Switch

For the signal of the fossil fuel tax to transmit effectively to market players, three conditions are necessary. First, the fossil fuel tax rate needs to be certain. The Act accomplishes certainty by expressly stating the schedule of increases in the price of carbon for every year from 2020 to 2050.

Second, the opportunity cost of failing to switch to renewable sources, the annual price of carbon setting the tax rate, needs to increase over time. If the tax rate increases at an accelerating rate over time, economic actors will have the greatest encouragement to switch from fossil to renewable fuels as early as possible. As translated into an equivalent tax on gasoline in inflation-adjusted, 2018 dollars, the Act's price of carbon increases in annual increments at an accelerating rate, from $0.36 per gallon of gasoline in 2020 to $1.01 per gallon in 2030, $4.66 per gallon in 2040, and $100 in 2050.

Third, businesses and consumers must be aware of and understand the future tax rates at the very outset, to be able to make informed decisions about how to spend their capital and operating costs to adapt most optimally to the tax. The Act makes an annual adjustment to the price of carbon dioxide pollution to account for the preceding year's change in the Consumer Price Index. The remaining formulas and information permit any business to determine its long-term tax liability under the Act in real dollars. There is no periodic adjustment to the price of carbon based on an agency report, no political maneuvering such a report might open the door to, and no significant factor left to chance.

These kinds of factors, which AFCWFFT eschews, are discussed below in the sections on "Environmental Integrity Mechanisms" and "Leave Little to Chance to Agency Regulation."

b. Revenue Profile of a Well-Constructed Fossil Fuel Tax

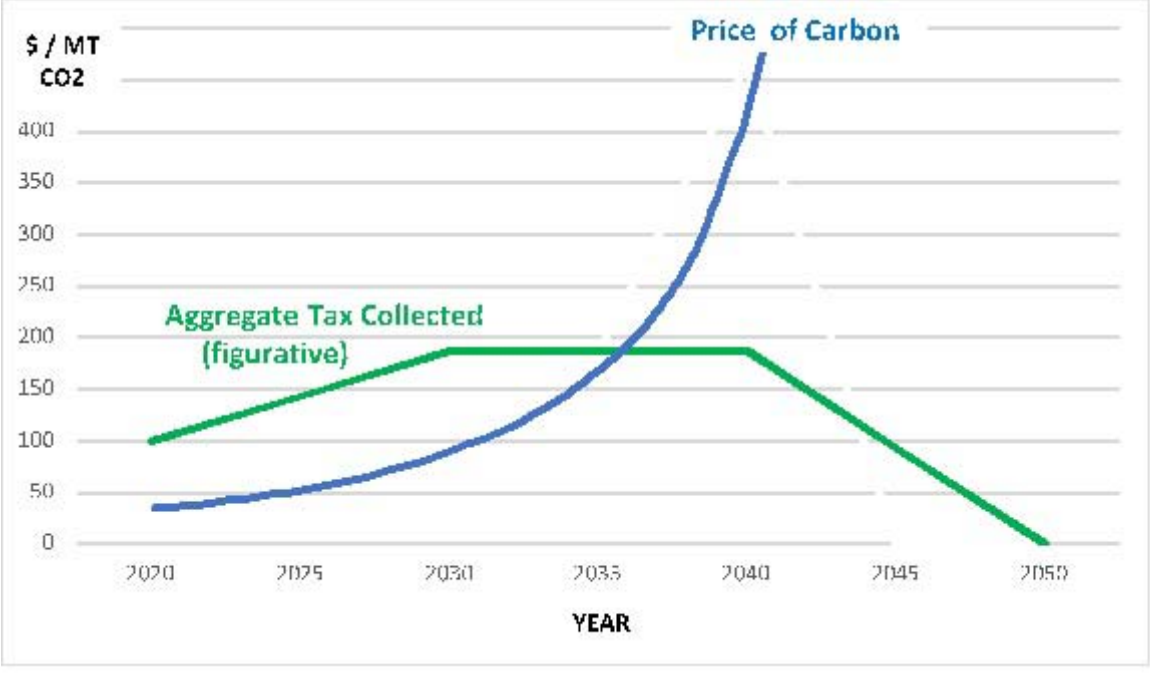
A rough estimate of revenue from a tax of $36 per metric ton of carbon dioxide, AFCWFFT's starting point in 2020 and equating to 36 cents per gallon of gasoline, is that it will raise $150 billion per year, or $1.5 trillion dollars over ten years.[4]

However, if the tax rate increases over time, aggregate fossil fuel tax collections will increase, since people and their specific economic activities subject to the tax will be paying it at a higher rate. Eventually, as more people conserve and switch to renewable sources of energy not subject to the tax, fewer people and activities will have to pay the tax. Since the tax rate will have increased, however, these fewer people will be paying around the same amount of tax in aggregate as when more people used to pay it at the tax's former, lower rate. Therefore, as pictured figuratively in the graph below, the green line for Aggregate Tax Collected plateaus in the middle years.

Finally, the proposed tax rate increases to the point that it reaches "infinity," which the Act defines as the carbon dioxide emissions equivalent of $100 per gallon of gasoline in 2050, so that no one is willing to engage in the activity that incurs the tax. At that point, revenues return to their pre-tax starting point of zero. Again, this $100 per gallon tax equivalent is merely illustrative and the tax schedule can just as soon be adjusted to reach a lower rate of "infinity" by 2050, such as $10 per gallon.

(graph appearing on next page)

[4] The Congressional Budget Office estimated that a tax of $25 per metric ton of carbon dioxide would raise between $125 billion and $150 billion per year in revenue. Although the price of carbon included in AFCWFFT starts at a higher number, $36 per metric ton, and increases annually, the 15-year phase-in of the tax's application to coal, discussed below, will dampen revenues.



Revenue Profile of a Fossil Fuel Tax Compared to Price of Carbon

c. Rate of Increase in Price of Carbon

The Act sets the rate of increase in the price of carbon to ensure that all categories of pollution emitter will have finished such polluting by 2050.

A study by Lawrence Berkeley Laboratory and the Pacific Northwest National Laboratory, displayed in the chart below, estimated that the following are the number of cycles or generations of new replacement equipment that will happen in the American economy between now and the year 2050. Each generation in any category of equipment presents an opportunity to switch from fossil to renewable energy equipment and technology. All switch-overs from fossil to renewable energy must take place for each category of equipment during that category's last replacement cycle ending at the year 2050, in order for fossil fuel emissions and net life cycle emissions to be zero in that year.

Therefore, an irresistible incentive to switch must be in place by the time of the start of the last generation of equipment leading to 2050. This irresistible incentive to switch consists of the disincentive imposed by both the 2034 tax rate and the certainty that this tax rate will increase at an accelerating pace after 2034.

category of energy-consuming equipment	# of generations of new equipment between 2018 and 2050	# of years one generation lasts	year by which irresistible incentive must be in place for category of equip't
lighting equipment	4	6	2044
residential hot water heaters	3	6	2044
light duty vehicles	2	11	2039
furnaces for interior spaces	2	11	2039
heavy duty vehicles	1	16	**2034**
industrial boilers	1	16	**2034**
power plants	1	16	**2034**
residential buildings	0	n.a.	n.a.

In other words, the tax must be so high that no one buying a car in 2039 (eleven years before 2050 and the start of the last 11-year generation of cars before the 2050 end-point for fossil fuel consumption) or any year after 2039 will buy a car that runs on fossil fuel. Similarly, the tax must incentivize all power plants re-equipping in 2034 (the start of the last 16-year cycle before 2050) and thereafter to shift entirely to renewable energy sources (including taking advantage of carbon capture and storage). In this way, all equipment in the entire economy will be operating on renewable energy by 2050, producing no net, anthropomorphic, greenhouse gas emissions by then.

Due to the 2034 start of the last generation of equipment leading to 2050 for the three equipment categories of heavy duty vehicles, industrial boilers, and power plants, 2034 is the effective year that the price of fossil fuel carbon must be set so high that all persons purchasing such equipment thereafter will only buy it to run on the most renewable of fuels and energy sources.

The schedule of increases in the price affixed to carbon dioxide set forth below is intended to provide a modest incentive to all decision-makers purchasing each of the categories of equipment listed above to make the switch upon replacing their current generation of equipment. Since the annual carbon price increase accelerates in pace, the cost and penalty will become more and more harsh, the longer each decsion-maker waits to make the switch.

As defined in the **"PRICE PER METRIC TON OF CARBON DIOXIDE" AT PAGE 11**, AFCWFFT proposes the following schedule for the price of carbon, which price would be multiplied by the carbon mole fraction of the energy supply measured at its source to arrive at the amount or level of tax paid by mass of the energy source:

Year	$ Tax per MT CO2	% Tax Increase at Start of Year	$ Increment Tax Increase at Start of That Year	Equivalent Approximate $ Tax per Gallon of Gasoline
2020	36.00			0.36
2021	38.00	5.56	2.00	0.38
2022	41.00	7.89	3.00	0.41
2023	45.00	9.76	4.00	0.45
2024	50.00	11.11	5.00	0.50
2025	56.00	12.00	6.00	0.56
2026	63.00	12.50	7.00	0.63
2027	71.00	12.70	8.00	0.71
2028	80.00	12.68	9.00	0.80
2029	90.00	12.50	10.00	0.90
2030	101.00	12.22	11.00	1.01
2031	113.00	11.88	12.00	1.13
2032	126.56	12.00	13.56	1.27
2033	143.01	13.00	16.45	1.43
2034	163.03	14.00	20.02	1.63
2035	187.49	15.00	24.46	1.87
2036	217.49	16.00	30.00	2.17
2037	256.64	18.00	39.15	2.57
2038	307.96	20.00	51.33	3.08
2039	375.72	22.00	67.75	3.76
2040	465.89	24.00	90.17	4.66
2041	587.02	26.00	121.13	5.87
2042	751.38	28.00	164.36	7.51
2043	976.80	30.00	225.41	9.77
2044	1,289.37	32.00	312.57	12.89
2045	1,727.76	34.00	438.39	17.28
2046	2,349.75	36.00	621.99	23.50
2047	3,242.66	38.00	892.91	32.43
2048	4,572.15	41.00	1,329.49	45.72
2049	6,675.33	46.00	2,103.19	66.75
2050	10,013.00	50.00	3,337.67	100.13

d. Phase-in the Fossil Fuel Tax on Coal

A tax of $36.00 per metric ton of carbon dioxide, the starting point on January 1, 2020, amounts to 15 percent of a $2.50 gallon of gasoline that was the going price in 2017. However, due to coal's much lower price per unit of energy and much higher carbon dioxide emissions, this same tax rate is 167 percent above the $70 market price in 2017 for one short ton of coal.

Since imposing a 167 percent tax on coal in one fell swoop would be tremendously disruptive and politically unpalatable to Republican and some Democratic lawmakers from coal-producing and -consuming states, AFCWFFT phases in the fossil fuel tax on coal. It has a 15-year phase-in period, which can be adjusted longer or shorter, depending on political imperatives. Under AFCWFFT as drafted, coal begins in 2020 with a tax rate that is 3 ½ percent of the full tax rate imposed on other fossil fuels. It ends in 2034 with a tax rate that is 100 percent of the full tax rate on other fossil fuels. Like the full annual price of carbon dioxide pollution itself discussed above, this phase-in on coal increases at an accelerating rate over time, to encourage early switch-over from the fossil fuel source.

According to the Lawrence Berkeley Laboratory data listed in subsection (c) above, there is only one single generation of new power plants that will be installed between the starting point of the proposed tax in 2020 and the year 2050. Therefore, by the year 2034, the fossil fuel tax on coal needs to be high enough that all electric power companies will make the decision in that year and all subsequent years to switch 100 percent away from coal and natural gas in favor of renewable sources of electricity and energy. The fact that natural gas is taxed at the same rate as petroleum and does not benefit from the same gradual phase-in of the tax that coal does will serve as a further sop to coal, since without any fossil fuel tax in place, natural gas is currently replacing coal as the energy source of choice for utility electrical power generation.

Paragraph (FF) of the definition of the **"PRICE PER METRIC TON OF CARBON DIOXIDE" AT PAGE 16**, sets forth the formula for this price schedule for implementing the fossil fuel tax phase-in on coal. Here it is in numbers:

Year	**Fossil Fuel** $ Tax per MT CO2	**Tax on Coal** $ Coal Tax per MT CO2	Incremental % Increase at Start of Year	% Coal Tax Is of Full Tax	Approximate $ tax per $70 Short Ton of Coal	% Tax Is per $70 Short Ton of Coal
2020	36.00	1.20		3.33	3.89	5.56
2021	38.00	2.53	3.33	6.67	8.23	11.76
2022	41.00	4.10	3.33	10.00	13.31	19.02
2023	45.00	6.15	3.33	13.67	19.98	28.54
2024	50.00	8.67	3.33	17.33	28.14	40.20
2025	56.00	11.20	3.33	20.00	36.37	51.96
2026	63.00	14.91	3.33	23.67	48.42	69.18
2027	71.00	19.40	3.33	27.33	63.01	90.01
2028	80.00	24.00	3.33	30.00	77.93	111.33
2029	90.00	30.00	3.33	33.33	97.41	139.15
2030	101.00	38.05	3.33	37.67	123.55	176.49
2031	113.00	50.85	7.33	45.00	165.12	235.89
2032	126.56	69.61	10.00	55.00	226.03	322.90
2033	143.01	107.26	20.00	75.00	348.30	497.57
2034	163.03	163.03	25.00	100.00	529.41	756.30
2035	187.49	187.49	0.00	100.00	608.82	869.74
2036	217.49	217.49	0.00	100.00	706.23	1,008.90
2037	256.64	256.64	0.00	100.00	833.35	1,190.51
2038	307.96	307.96	0.00	100.00	1,000.02	1,428.61
2039	375.72	375.72	0.00	100.00	1,220.03	1,742.90
2040	465.89	465.89	0.00	100.00	1,512.84	2,161.20
2041	587.02	587.02	0.00	100.00	1,906.18	2,723.11
2042	751.38	751.38	0.00	100.00	2,439.90	3,485.58
2043	976.80	976.80	0.00	100.00	3,171.88	4,531.25
2044	1,289.37	1,289.37	0.00	100.00	4,186.88	5,981.25
2045	1,727.76	1,727.76	0.00	100.00	5,610.41	8,014.88
2046	2,349.75	2,349.75	0.00	100.00	7,630.16	10,900.23
2047	3,242.66	3,242.66	0.00	100.00	10,529.63	15,042.32
2048	4,572.15	4,572.15	0.00	100.00	14,846.77	21,209.68
2049	6,675.33	6,675.33	0.00	100.00	21,676.29	30,966.13
2050	10,013.00	10,013.00	0.00	100.00	32,514.43	46,449.19

The rate of tax phase-in on coal included in the Act and stated above, like the rate of the tax itself, is illustrative and can be adjusted according to political bargaining.

PART II. WORLDWIDE SCOPE

4. Inherent Flaws of the Paris Accord Renders It Not Up to the Task

Global warming requires a global solution, in which every country makes sacrifices and incurs costs in proportion to its present and past use of fossil fuels. The submission by each country of its own plan under the Paris Accord for reducing its greenhouse gas emissions results in a patchwork of policies that mesh poorly and fail to create synergies on an international scale. The Paris Accord does not have a means of monitoring national performance, other than self-reporting, and it entirely lacks an enforcement mechanism.

The weaknesses of this system are apparent from the fact that the Nationally-Determined Commitments under the Paris Accord, as voluntary and lax as they are, failed to muster projected emissions reductions that even come close to no more than a 2 degree Celsius maximum temperature rise by mid-Century, the cornerstone of the Paris Accord regime. Since many of the these self-determined emissions reductions were more likely than not to be over-estimates, the slippage from the path that is now required is likely even greater.

5. International Scope

The America First, Comprehensive, Worldwide, Fossil Fuel Tax replaces the ineffective Paris Accord regime by way of reciprocal sovereign adoption and American-led enforcement. Its marked differences in these regards from bills and proposals in current circulation are now explained.

a. Flaws of a Border Carbon Adjustment

Carbon tax bills introduced before AFCWFFT have weak and bureaucratically unmanageable mechanisms for inducing other countries to take effective action. These bills rely on a "Border Carbon Adjustment" ("BCA"). Under a BCA, first, a government official would determine if a foreign country had a mechanism for affixing a price to carbon comparable to the price set by the United States. If, for instance, the European Union's cap-and-trade regime priced carbon at the same rate as American law did in a particular year, then American goods would be exported to the EU and EU goods imported to the United States without any adjustment for the tax.

The first problem with the BCA is that in weighing an American fossil fuel tax versus a foreign cap-and-trade regime, it compares apples and oranges. If the American tax is to solve the problem, it must apply comprehensively across the American economy. Who is to say that the foreign cap-and-trade would apply similarly broadly? What is the price of carbon is determined to be different under the two regimes under comparison? The philosophy of AFCWFFT is that for a fossil fuel tax to function effectively worldwide, all countries must be operating under its regime, and those who have already set up cap-and-trade systems need to abandon them in favor of adopting AFCWFFT. **SECTION 302(a)(10) AT PAGE 47** sets this as an objective of the Act.

The second step under a BCA occurs if the U.S. government official determined that the foreign country did not have an effective carbon pricing regime comparable to the one adopted in American

law. Then American exporters to that country of products in energy-intensive export industries would receive reimbursement of the tax at a uniform rate applied to all manufactured goods in each industry, no matter each manufacturer's own efforts to switch from fossil to renewable fuel inputs. Competing imports from the foreign country would have the tax imposed at the U.S. border, again regardless of an individual manufacturer's decisions about fossil versus renewable energy inputs in the country of origin.

A 2010 inter-agency report gives some data on the energy intensity of certain high-export industries to aid the Treasury Department in devising a formula to reimburse and tax the energy intensity of industries whose products cross the border. Such a formula, included in recent carbon tax proposals, would apply uniformly to companies within an industry category. Since glass requires much energy to manufacture, all glass goods crossing the border would bear the same rate of tax, while all steel products would face a different tax rate.

The second problem with a BCA is that this formula, while taxing and thereby raising the price of carbon-intensive goods, would fail to distinguish between individual manufacturers' energy inputs from fossil versus renewable fuels. This feature of the BCA runs counter to the very idea of a carbon tax, which is to give a signal to market players, who are businesses and consumers, allowing them to make individual decisions choosing between sticking with the taxed fossil fuel or switching to the untaxed renewable source of energy. In reimbursing or imposing the tax at the border by industry category, regardless of an individual manufactured good's actual, embodied life cycle greenhouse gas emissions, the BCA dis-empowers the invisible hand of the free market from functioning at the international level.

The effect of these BCA's would be to increase the prices of all goods in the affected industries, without prompting anyone to switch within the industry from fossil to renewable energy. In fact, those that chose to switch would face a penalty. The switchers would first invest in the renewable energy equipment and enabling technology, but then, would not reap any benefit, since the tax rate applied to them within their industry, for all their admirable initiative, would remain the same.

The third objection to a BCA is that it would involve the federal government in regulating ordinary foreign commerce to an unprecedented degree. The tax-reimbursing and -collecting bureaucracy created by a BCA would be highly intrusive to American international trade on an unprecedented scale.

Lastly, being a rigid regulatory system, if the history described in the "Eliminate Regulations" section below is any lesson, the agency administering the BCA would have difficulty adapting it to fit new, low-carbon products within existing industries, and new industries in their entirety.

b. False Hope in Dominoes Falling and Even If They Do, False Hope in Dominoes' Efficacy

George Shultz and Jim Baker's Climate Leadership Council points out that most of the other large economies in the world already have some sort of carbon pricing system in place, starting with

cap-and-trade system that the European Union has instituted. This Council takes the position that if the United States adopts a carbon tax, the remaining countries will, of their own volition, follow suit by adopting their own price on carbon.

Simply put, if the world is going to rely on existing programs like the EU's cap-and-trade program that has not even had a functioning price for carbon at times, then the world is not going to come close to solving the problem. In that case, the question arises, Why even try? The idea that Russia and Saudi Arabia, the two largest fossil fuel-producing countries after the United States, will somehow spring into action to tamp down their domestic fossil fuel production by way of raising their domestic fossil fuel tax, unless compelled to do so by a law like AFCWFFT, is wishful thinking. And how will the United States ensure that China, which now generates twice the greenhouse gas emissions of the U.S., adopts a policy with as much teeth as America's own, if America adopts any kind of effective program at all? Only American enforcement can give favorable answers to these questions.

c. America-First Brings About International Reciprocity and Enforcement

AFCWFFT embraces an America First approach that avoids the flaws of a BCA and will bring about swift reciprocal adoption by foreign countries. There are two America First elements to AFCWFFT. These are spelled out in the Act's **TITLE III, FOREIGN RECIPROCITY, AT PAGE 43**.

i. America Takes the Driver's Seat

First, the United States takes the driver's seat of dictating to other countries the precise elements of an international fossil fuel tax and corresponding regulatory reform, which are the provisions of AFCWFFT, as summarized in **SECTION 302(a) AT PAGE 43**. The United States sits as judge of whether other countries have complied, or not. It requires all other participating countries to abide by its rulings and impose the same penalties it assesses on non-complying countries, or else face penalties of their own. **SECTION 302(b) - 303 AT PAGES 45 - 46.**

From conversation with French authorities and others abroad, other countries, even France, still look to the United States to take a supra-national role of this kind, when one is called for. There is no other government in the world capable of taking on this kind of role, not the European Union and not the United Nations (who is not capable of acting as decisively as AFCWFFT authorizes the U.S. government to act). Most other countries crave American leadership on the issue of global warming and with the exception of a few petroleum-producing giants (Saudi Arabia, Russia and Kuwait), would be pleased to alter their own policies to follow America's lead, provided it is fair and effective. The recalcitrant countries would find by the Act's effective enforcement mechanism that they had no option but to go along and conform with it by adopting their own, reciprocal tax and companion regulatory reform.

There is precedent for the role proposed by AFCWFFT for the Secretary of State to serve as annual evaluator and judge of other countries' reciprocal performance and the Trade Representative to serve as executioner. United States human rights law already requires the Secretary of State to assess other countries' human rights performance and empowers the President to impose sanctions on

miscreant countries. Banking laws now require other countries to adopt the same transparent banking practices Americans are accustomed to, to prevent money laundering, corruption, and the financing of terrorism. Violators can face exclusion from international banking transactions and conventions.

ii. Retroactive Audit Date

The power of the very idea of an international fossil fuel tax is already in evidence. In March 2017, representatives of the Climate Leadership Council met with President Trump's Director of Domestic Policy, Gary Cohn, in the White House to explore including a carbon tax in Republican tax reform proposals. One week after word leaked of this meeting, Saudi Arabia suddenly lowered its domestic tax on Saudi Aramco's extraction of petroleum. This step was in anticipation of some form of international fossil fuel tax that would require Saudi Arabia to raise its domestic petroleum tax. This step was an attempt to preempt such an international tax and negate its impact on Saudi Arabia's domestic fossil fuel resource.

In so doing, this step made Saudi Arabia a much more attractive place for manufacturers to locate new operations, as compared to, say, the United States. It offered them a lowly-taxed supply of petroleum energy with which power their operations.

For this reason, the Secretary of State's initial audit under AFCWFFT must examine every foreign participating country's domestic fossil fuel tax levels and accounts as it existed prior to March 2017. An audit snap shot before that date will ascertain the level of fossil fuel tax that was in place before fossil fuel producers like Saudi Arabia preemptively lowered their domestic tax in anticipation of a new, international fossil fuel tax. **SECTION 302(b) AT PAGE 45** specifies that the Secretary of State's initial audit should be framed as of January 1, 2017, and that countries that lowered their domestic fossil fuel taxes since that date must raise them back up, plus add the increment of new tax set forth in the Act.

iii. Domestic Fossil Fuel Consumption Would Carry Half the Tax of Imports

The second America First feature has to do with imposing the tax both at the point of a fossil fuel's extraction, either the well head or the mine mouth, and at the point of importation into the United States. Present bills in circulation impose the tax after the petroleum and natural gas refineries, which means that the tax does not apply to crude fuel combusted at the wellhead and in processing.

Assuming that Canada participated in this regime, crude petroleum entering the United States from Canada for refining here would have had the tax levied domestically by the Canadian government at the point of extraction, and then it would be taxed again at the same level upon entry to the U.S. **SECTION 101, CREATING NEW TAX CODE SECTION 9902(a) AT PAGE 21,** states this requirement to tax both domestic extraction and importation, and TITLE III, discussed above, sets forth the requirement of international reciprocity.

By comparison, crude petroleum extracted within the United States that was consumed domestically would face the tax only once. This would favor consumption of U.S. fossil fuel

resources within the United States and domestic supply chains that adapted to take advantage of this America First component.

PART III. STRUCTURE

6. Structural Categories of Greenhouse Gas Pollution Subject to the Tax

AFCWFFT governs five categories of carbon polluters that run the gamut, each one capable of earning off-setting credits if they act in a deserving and mitigating way.[6] These categories, set forth in the Act's Title I, are:

a. Fossil fuel miners can earn a credit for capturing and storing, though not using, the carbon dioxide their fuel later generates at the refinery or the power plant.[7] **SECTION 101, CREATING NEW TAX CODE SECTIONS 9902 and 9907 AT PAGES 21 and 34**.

b. Non-fossil fuel, renewable sources of greenhouse gas emissions are biomass and biofuel feedstocks. The Act looks solely to the generation of the feedstock on its source land; processing would no longer be specifically regulated as to its life cycle greenhouse gas impact, except by the effects of the tax imposed on fossil fuels burned to process the feedstock into finished fuel. In other words, biological matter that requires much fossil fuel energy to be refined will incur the tax in its processing, as compared to one that is used in closer to its raw state coming from the land.

For each batch of biomass or biofuel feedstock, a calculation is made of the net gain by which its use will displace greenhouse gases emitted by use of its fossil fuel substitute (defined as the "Fossil Fuel Net Life Cycle Greenhouse Gas Replacement Value of Biomass" **AT PAGE 7**). Any plant matter that takes longer than 5 years to recover the carbon stock pre-existing it on the land is subject to tax, although the responsible party can take mitigating measures. A statutory decision tree looks to the source land and any compensating acreage planted in trees, permitting this standard to apply in the temperate United States and Europe, as well as a tropical country like Brazil. Therefore, this replacement of the U.S. Renewable Fuel Standard and other existing regulations is feasible for deployment in every country around the world, permitting uniform audit of the Act's implementation. **SECTION 101, CREATING NEW TAX CODE SECTION 9903 AT PAGE 22** and definition of **"FOSSIL FUEL NET LIFE CYCLE GREENHOUSE GAS EMISSIONS REPLACEMENT VALUE OF BIOMASS" AT PAGE 7.**

[6] The main source of anthropogenic greenhouse gas emissions that the Act leaves out are farmers engaged in turning the land, which releases methane, nitrous oxides, and carbon dioxide to the atmosphere. No- or low-till farming substantially reduces these emissions. It would be difficult to tax such emissions in a proportionate way. The best way to reduce them is to offer a tax credit or subsidy to farmers for purchasing the new equipment required, or for engaging in this practice. Some measure of tax credit already exists in federal law.

[7] The reason for not giving a credit for the use of captured carbon dioxide is explained in Section 7(d)(iv) below.

c. **Non-fossil fuel, non-renewable, industrial sources** are industrial processes like the calcining of lime that emit greenhouse gas emissions absent the combustion of fossil fuel. Taxation is limited to stationary sources that are big enough to be subject to current point-source regulation of emissions. **SECTION 101, CREATING NEW TAX CODE SECTION 9904 AT PAGE 28**.

d. **Flourinated gas** is taxed separately according to a schedule designed to eliminate its use within ten years. This section was modeled on a similar section appearing originally in H.R. 3420, introduced by Rep.'s Blumenauer and Cicilline and in the Senate, by Senator Whitehouse. **SECTION 101, CREATING NEW TAX CODE SECTION 9905 AT PAGE 29.**

e. Cows contribute around 25 percent of all human-induced methane produced on earth, and **ruminant animals** account for 14.5 percent of all greenhouse gas pollution worldwide. U.N. FAO, reported at: www.cnn.com/2015/09/29/opinions/sutter-beef-suv-cliamtetwo-degrees/index.html [*sic*]. According to NASA's estimate, the average dairy cow emits 80 to 120 kilograms of methane per year, the carbon dioxide emissions equivalent produced by an average family car. http://metro.co.uk/2017/03/25/cow-burps-rather-than-farts-are-destroyingthe-earths-atmosphere-6531638/. The Act permits farmers to earn mitigating credits by implanting a tube that routes methane from the animal's stomach to a collection bag strapped on its back or by adding soothing flowers to the cow's diet that reduce methane production. **SECTION 101, CREATING NEW TAX CODE SECTION 9906 AT PAGE 32.** The carbon price that the Act affixes to ruminant animals is set at around one-sixth of their actual, estimated methane emission rate[1] and depends on the animal's weight in relation to a cow weighing 1,300 pounds.[2]

7. Eliminate Regulations

AFCWFFT completely eliminates major sets of regulations, more so than any other carbon tax proposal in circulation. This is one of the features that set AFCWFFT apart as establishing a new paradigm for solving the problem of global warming. This regulatory elimination may also give AFCWFFT a stronger chance of satisfying conservative ideological objections to a carbon tax than incremental approaches currently circulating.

a. Eliminate Coal GHG Emissions Regulations

Elimination of the President Obama's Clean Power Plan and President Trump's replacement Affordable Clean Energy Rule (together "Coal GHG Emissions Regulations") is a political given in exchange for any carbon tax. Left to its own devices, a tax on fossil fuels will have the deepest impact on reducing coal consumption, since coal embodies fifty percent more carbon dioxide emissions then petroleum per unit of delivered energy, and nearly twice that of natural gas.

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[1]Methane is 23 times more potent than carbon dioxide as a heat-trapping gas upon emission.

[2]According to this formula in the Act, if the animal weighs less than 1,300 pounds, then it will pay proportionately a lower level of the tax.

Elimination of President Obama's Clean Power Plan and President Trump's Affordable Clean Energy Rule is set forth in **SECTION 201 AT PAGE 37**.

b. POP Diesel's Meritorious Pure Jatropha Plant Oil Diesel Engine Fuel

An understanding of POP Diesel's pure jatropha plant oil diesel engine fuel will help the reader appreciate further discussion of AFCWFFT's regulatory elimination. Evidence is indisputable that:

i. POP Diesel's pure jatropha plant oil has by far the lowest global warming impact of any fuel or energy source for heavy duty engines that contribute 20 percent of total greenhouse gas emissions from America's transportation sector;

ii. Pure jatropha plant oil diesel engine fuel gives better engine performance than petroleum diesel fuel, causing the engine to run more quietly and smoothly, and helping it to last longer, and;

iii. This POP Diesel Fuel will sell at a 50-cent per gallon discount below the price of petroleum diesel fuel. In addition,

iv. POP Diesel is presently engaged in starting a supply of pure jatropha plant oil from West Africa that in theory will be capable of replacing all of the petroleum diesel consumed in the United States within 22 years, 22 percent of worldwide supply. The genesis of this effort preceded the latest call of the Intergovernmental Panel on Climate Change for the world to put an area nearly the size of Australia under biomass cultivation.

Note that POP Diesel has won EPA approval for ordinary plant oil, not biodiesel. Biodiesel starts out as plant oil, but undergoes an energy-intensive and costly transformation of the molecule. This results in hazardous waste and a fuel, biodiesel, that can blend with petroleum diesel, but only in at most a 20 percent concentration, meaning the remaining 80 percent is petroleum diesel fuel.

By comparison, pure plant oil runs at 100 percent concentration in an inexpensively, POP Diesel-equipped engine. Pure plant oil requires half the energy in its manufacture as biodiesel, according to a study done by the National Renewable Energy Laboratory and a white paper commissioned by EPA.

The petroleum industry, and as discussed below, EPA regulations, favor biodiesel because under the guise of calling the fuel "biodiesel," that industry can sell 5 percent biodiesel blended with 95 percent petroleum diesel fuel, which is the typical blend concentration in the United States.

c. Defining Any Fuel Or Technology for a Benefit by Definition Excludes Others

Presently, there are policy distortions of the free market that would prevent any carbon tax from succeeding in freeing the world of fossil fuel use by 2050. Federal and state policies favoring the

production or consumption of one form of energy and its enabling technology over another, be it a fossil or renewable fuel, have a disruptive effect, exemplified below with particular reference to the meritorious but blocked products of POP Diesel.

For example, for the last decade, Congress has re-authorized for biodiesel a $1 per gallon production tax credit, in addition to tradable credits under the Renewable Fuel Standard that can be worth a second dollar per gallon. The exclusion of pure jatropha plant oil diesel engine fuel from these kinds of benefits not only deprives POP Diesel of benefits it is more worthy than biodiesel to have, but causes POP Diesel to struggle to find private finance. The solution is not to give POP Diesel Fuel comparable credits, but to eliminate all credits and subsidies favoring any fuel, enabling technology, and infrastructure, be it a fossil or a renewable fuel, to pave a level playing field for the success of a fossil fuel tax. According to the policy stated in **SECTION 204 AT PAGE 39**, Congress would not enact or renew any more specialized credits, subsidies, allowances or set-asides for any fossil or renewable fuel, when the present ones expire. (**SECTION 202 AT PAGE 37** would repeal existing subsidies for fossil fuels.).

Any definition of an energy source or technology to which a law or regulation gives a benefit by definition excludes other or new technologies that fall outside the definition. Those falling within the government's definition are able to attract private investment and finance; those excluded, cannot. POP Diesel cannot emphasize this point enough. All of these preferences must come to an end for the free market, influenced only by the weight of the carbon tax, to do its job and solve the problem.

In addition, since the transportation sector dominated by petroleum now generates more greenhouse gas emissions than any other in the American economy, a remedy needs to focus on eliminating all of the advantages petroleum has amassed. Since existing regulations, as explained below, favor petroleum, their elimination will have a doubly powerful effect in removing barriers to competition from renewables.

d. Regulations That Block Entry of Renewable Fuels and Distort the Markets for Fuel, Investment and Finance

As discussed below, motor vehicle fuel efficiency and greenhouse gas emissions standards and the Renewable Fuel Standard are not necessary because they are superfluous to, and work at cross-purposes to, a clearly forecast and properly functioning fossil fuel tax. In addition, these regulations pose absolute barriers to entry to POP Diesel's pure plant oil diesel engine fuel ("straight vegetable oil"), even though this fuel has won EPA emissions approval to run in select diesel engines. POP Diesel proposes replacements below that could apply worldwide for both motor vehicle fuel efficiency and greenhouse gas emissions standards, and the Renewable Fuel Standard. Elimination would permit market entry of pure jatropha plant oil diesel engine fuel capable of replacing all of America's petroleum diesel fuel needs by 2042.

i. Eliminate All Motor Vehicle Fuel Efficiency & Greenhouse Gas Emissions Standards

The Fuel Efficiency and Greenhouse Gas Emissions Standards for cars and trucks ("Fuel Efficiency & GHG Standards," also known as the CAFE Standards for cars) function by their "Tailpipe Rule," which calculates petroleum fuel efficiency and petroleum greenhouse gas emissions from the measurement carbon dioxide exiting the tailpipe. Plant oil happens to generate a higher rate of carbon dioxide emissions upon combustion than does petroleum. Therefore, standards based on tailpipe emissions of carbon dioxide serve to exclude plant oil from the market in favor of petroleum.

Because plant oil's carbon dioxide tailpipe emissions will always exceed those of petroleum's, the Fuel Efficiency & GHG Standards, as Volvo Trucks has complained in regulatory comments, inhibit all major engine manufacturers from making engines suited to low carbon fuels like EPA-approved plant oil fuel, even though this fuel produces much lower net life cycle greenhouse gas emissions than petroleum, the true measure of a fuel's global warming impact. These engine manufacturers are unable to earn necessary credits meeting the Tailpipe Rule's strictures to be able to EPA-certify POP Diesel-equipped engines running on plant oil diesel engine fuel.[10]

Thus, the Fuel Efficiency & GHG Standards for cars and trucks automatically exclude from the market the most beneficial motor vehicle fuel for combating global warming and a supply of this fuel that could replace all of the petroleum diesel consumed in the United States within 22 years.

Elimination of the Fuel Efficiency & GHG Standards is stated at **SECTION 203(a) AT PAGE 38** of AFCWFFT.

ii. Fuel Efficiency Incentives Are Purposely Left Out of AFCWFFT

Fuel or energy efficiency has been called the "low hanging fruit" in the fight against global warming. That may have been the case when the first greenhouse gas regulations came into place nearly ten years ago, but all of the low-lying fruit has already been picked.

"Fuel efficiency" or "fuel economy" are names for making fossil fuel-dependent engines and machines run more efficiently on fossil fuels. Fuel efficiency does nothing to switch behaviors from fossil to renewable fuels. If anything, it makes this transition more challenging by lowering the cost of operating the engines and machines on the fossil fuel.

[10] POP Diesel challenged the Fuel Efficiency & GHG Standards in the U.S. Court of Appeals for the District of Columbia Circuit and lost. It has also separately petitioned EPA and the U.S. Department of Transportation on these issues, had U.S. Senators write them letters, and met with them, all to no avail.

Take, for example, petroleum fuel efficiency standards for trucks and cars. In addition to serving as barriers to entry described above, they are counter-productive. By lowering the rate of operating cost, they prompt suppliers to extend their transport routes over longer distances and put more trucks on the road, consumers to order more goods and more goods from further away, and businesses to develop new product lines that take advantage of the lower fossil fuel operating cost.

For an unimpeachable analysis, relying on federal data, of how the Obama Administration's Fuel Efficiency and Greenhouse Gas Emissions Standards for Medium- and Heavy-Duty Engines and Vehicles actually cause in aggregate *more* energy consumption and greenhouse gas emissions than if these regulations did not exist at all, the reader is welcome to consider the unpublished study posted at this link: http://popdiesel.com/pdf/DrSaundersAnalysis.pdf .

A. Instead, Can Adopt Engine Efficiency Standards

AFCWFFT offers that, instead of petroleum fuel efficiency standards, if Congress would like to encourage Detroit to make better engines, it order the Department of Transportation ("DOT") to adopt engine efficiency standards. Rather than relying on the measure of tailpipe carbon dioxide that gives petroleum an built-in advantage, engine efficiency measures the amount of energy going into an engine, regardless of the fuel type, as compared to the amount of work the engine performs. **SECTION 203(b) AT PAGE 39** and definition of **"ENGINE EFFICIENCY" AT PAGE 6.**

The notion of engine efficiency standards is not a proposal that POP Diesel advocates for. It is merely an idea that, if Congress feels it must enact a replacement for the counter-productive fuel efficiency standards that DOT's National Highway Transportation Safety Administration constructed under the influence of the petroleum industry from Congress's various statutory mandates, can serve some constructive purpose. Thus, this provision of AFCWFFT is the only one that POP Diesel would not object to having deleted from the draft bill.

B. Benefits of Conservation

In contrast to coerceive efficiency standards, conservation is voluntary conduct that citizens choose to engage in. For instance, the higher cost of transport caused by AFCWFFT may prompt some people to ride a bicycle or walk, rather than driving their car, even if their car runs on electricity or 85 percent ethanol. Higher food costs from more expensive transport may spur some people to buy locally or plant their own garden. In this way, conservation is better than renewable energy. It saves the renewable energy resources for activities that truly require the combustion or use of energy. Those engaging in conservation practices refrain from adding upward pressure on the price of renewable energy.

iii. Eliminate the Renewable Fuel Standard

If the Fuel Efficiency & GHG Emissions Standards function by denying beneficial plant oil fuel necessary tailpipe carbon dioxide credits to win engine manufacturer accommodation, the Renewable Fuel Standard ("RFS") further exemplifies the problem caused by the government's selecting fuels and their enabling technologies for some sort of benefit. By definition, those fuels and technologies not

selected lose out, and are all too often barred from gaining entry to the favored category, even though, as in the case of POP Diesel, these products may be superior to the ones favored by regulatory blessing.

The problem is compounded because exclusion from credits, subsidies, allowances or set-asides prevents these products from being able to attract the government and private investment and finance they need to gain a market foothold and grow. Funders trust the wisdom of statutory and regulatory blessings and want to put their money on a safe bet, rather than taking a chance on a product that, while winning EPA emissions approval, is not allowed to be sold on the U.S. market.

A. Undue Restriction on Eligible Feedstock Land

The RFS, along with the Fuel Efficiency & GHG Standards complained of above, make POP Diesel the poster child of this phenomenon. The RFS regulates, among other things, the land on which biofuel feedstock may be grown. The Renewable Fuel Statute restricts the award of its tradeable credits, called "RIN credits," to feedstock grown on land that, as of December 2007, was in agricultural use or lying fallow from past agricultural use. EPA regulations implementing the RFS statute require that, to qualify for these tradeable credits, the renewable fuel producer furnish documentary proof dating to the date of the statute's December 2007 enactment that the particular land from which the biofuel feedstock comes met this stricture.[11]

Regrettably, the poor countries in Africa whence POP Diesel is developing a supply of pure jatropha plant oil did not keep such records, and do not keep them today. Therefore, POP Diesel Fuel

[11] This provision is easily replaced by new evidence, satellite imagery, that has become available since 2007. As of December 2010, the United Stated Geological Survey ("USGS") had taken 2-meter, high acuity, black-and-white photos of the entire land mass of the earth. This evidence and date can serve as the benchmark for determining the vegetative cover of a specific plot of land anywhere in the world, whether it was forested or not, and to a certain extent, the density of vegetative cover. Since this objective evidence has become available, there is no longer any point, other than an unnecessary restriction, in limiting biomass cultivation to non-forested land that has previously been in agricultural use; all non-forested land should be opened to biomass cultivation, provided there are appropriate guidelines, and especially to take advantage of the vast expanse of the uninhabited African savannah that is available for re-planting and reforestation. AFCWFFT relies on this high acuity, USGS satellite imagery to answer all questions relating to land use for which data is necessary. See the definition of **"PRIMARILY FORESTED OR WOODED LAND" AT PAGE 17** and the **LAND PROHIBITION** set forth in the newly created Tax Code **SECTION 9903(c)(2) AT PAGE 24**. In place of the domestic RFS, section12 below describes the Act's "International Standard to Safeguard Land and Forest Resources and Penalize Harmful Biomass Cultivation and Harvesting Practices" that would apply to all countries around the world participating in the AFCWFFT regime.

can never qualify for the RFS's tradeable credits, which is the only way under the current regulatory regime to afford shipping it across the Atlantic Ocean to the United States market.[12]

B. Biodiesel Is Worse Than Fossil Fuels

For an additional example, another question mark looming over the RFS's picking winners and losers is biodiesel. Under industry pressure and by regulatory fiat, EPA reversed itself from its Proposed Rule and found in 2010 that biodiesel processed from plant oil meets the threshold requirement of a fifty (50) percent life cycle greenhouse gas emissions reduction qualifying it for enhanced tradeable credits under the RFS. In contrast, a recent study commissioned by the European Union found that the manufacture of biodiesel causes more life cycle greenhouse gas pollution even than petroleum diesel fuel. Biodiesel Worse for the Environment Than Fossil Fuels, Warn Green Campaigners,www.euractiv.com/section/climateenvironment/news/biodiesel-worse-for-the-environment-than-fossil-fuels-warn-greencampaigners/.

It would be more efficient without the RFS's arbitrary award of generous credits (and Congress's continuing to extend a $1 per gallon biodiesel production tax credit), if the free market, influenced by AFCWFFT, could decide the relative merit of biodiesel, as compared to other sources of energy and their enabling technologies for moving heavy duty loads. Since biodiesel requires twice the energy of plant oil in its manufacture, the free market's choice between them would be interesting to see develop.

C. Algal Fuel from Industrial CO2 Emissions

A third example of the RFS's picking a fossil fuel-oriented winner at the expense of more meritorious losers is EPA's award of tradeable RFS credits to algal fuel made with the carbon dioxide exhaust caused by fossil fuel refining. Like credits for petroleum extraction under the name of "enhanced oil recovery," by creating a monetary incentive for industrial carbon dioxide exhaust, these algal credits subsidize the manufacturing process of a fossil fuel, such as the refining of petroleum. They also draw private investment and finance to this activity and away from competing biofuels that do not depend on an industrial supply of carbon dioxide for their manufacture.

D. Political Considerations Favor Swapping the Renewable Fuel Standard for a Fossil Fuel Tax

The RFS is already under assault by elements within the petroleum industry, who do not like its requirement to buy credits off-setting every gallon of gasoline and petroleum diesel fuel with ethanol or biodiesel. Ultimately, its elimination should not be of concern to corn and soybean farmers and farm state legislators, provided an effective fossil fuel tax took its place.

[12] POP Diesel has petitioned EPA on this score and suggested allowing the use of accessible contemporary documents, such as affidavits submitted by local government officials, to no avail.

Dialogue between POP Diesel and the staff representative of a Republican farm state Senator from the Midwest is instructive. The question was whether the Senator would support eliminating the Renewable Fuel Standard that gives a 50-cent to one-dollar per gallon tradable credit to every gallon of ethanol processed from corn or biodiesel coming from soybeans, if in its place, every gallon of gasoline and petroleum diesel fuel faced an additional 50–cent or one-dollar per gallon tax, the level of tax AFCWFFT would impose by 2030. The affirmative response was that the Senator "would like to be part of that conversation."

Elimination of the Renewable Fuel Standard is set forth in **SECTION 101, CREATING NEW TAX CODE SECTION 9903(g) AT PAGE 28**.

E. Adopt an International Standard to Safeguard Land and Forest Resources and Penalize Harmful Biomass Cultivation and Harvesting Practices

By eliminating the Renewable Fuel Standard and other regulations that pick favorites in the field of carbon accounting, AFCWFFT creates a level playing field for biofuels and biomass. However, there is still a place for regulations in this field, to safeguard precious land and forest resources and prevent their wanton waste by avaricious and short-sighted biomass businesses. Once domestic distortions are eliminated, it becomes possible to create principles and objectives that can apply across borders, opening a stronger international market for biomass than exists presently.

Since by the America First enforcement provisions, the tax should apply equally in all countries around the world, a uniform set of principles and standards applying to all forms of biomass worldwide becomes feasible. Set forth in newly created Tax Code **SECTIONS 9903(b) and 9903(c) AT PAGES 23 and 24**, these provisions replace the RFS. They safeguard precious forest resources. And they permit calibrating the tax's disincentive for injudicious land use changes to accord with the net life cycle greenhouse gas emissions impact of a particular sample of biomass used to make fuel or energy from that land. The tax is applied at graduated levels to those sources of biomass determined to take too long to restore harvested carbon stocks.

F. Replace the Administration's Arbitrary Decision to Treat All Forest Biomass as Being 100 Percent Carbon Neutral

A decision tree set forth in **SECTION 9903(b) AT PAGE 23** distinguishes between biomass grown in a tropical versus a temperate climate and sets standards for each such category of biomass. To properly negate and minimize the tax to account for biomass cultivation that does not cause a deleterious land use change, POP Diesel conferred with groups like the National Wildlife Federation and the American Forest & Paper Association. Following early circulation of the draft of this provision, in September 2018, the Secretaries of Energy and the Interior and the Administrator of EPA circulated a joint letter to all Members of Congress and Senators affirming that the Administration had determined to treat all forest biomass as being 100 percent carbon neutral.

However, the Administration's determination was completely arbitrary and capricious. "Carbon-neutrality" is a relative term, dependent on costs and benefits measured over time. Whether

biomass is carbon-neutral depends on land use change, the rate of carbon sequestration, and the number of years over which the decider allows the measure of carbon restoration to be calculated. For instance, trees cut down in the southeastern U.S. may take 20 years to have their carbon stock restored, depending on the intensity and number of acres that are re-planted for every acre of trees cut down, the soil and weather conditions permitting re-growth, and the species of tree planted. Or they may take 50 years. Or if there is aggressive re-planting on many times more acres than were cut down, it may take only 5 years.

The recent activity and publicity on this front (such as the 3 cabinet members' letter to every Member of Congress) is to try to curtail consideration of this issue, so that when the Climate Leadership Council, their lobbying organization Americans for Carbon Dividends, and their grass roots citizen organization Citizens' Climate Lobby introduce a wimpy and lame carbon tax bill in 2019, it will not have to include replacing the RFS. Now that the Washington Post editorial board has called for rescinding the RFS, however, that question should reasonably lie the center of public discussion.

This decision tree set forth in **SECTION 9903(b)** and the land use prohibition set forth in **SECTION 9903(c) AT PAGES 23 to 25** allows AFCWFFT's standards for biomass to be adopted and applied in every country around the world, in both temperate and tropical climates. This replacement of the RFS with a provision that can apply across borders and climate zones is one of the features that allows AFCWFFT to be internationally reciprocal and enforceable, as compared to the America-centric and idiosyncratic RFS. The petroleum industry fears a bill such as AFCWFFT that would have teeth to its worldwide enforcement, as compared to either the Paris Accord, which relies on voluntary compliance and self-reporting, or inclusion of an Environmental Enforcement Mechanism (discussed in Section 8 below) in an American-only carbon tax, which EIM would permit manipulation of and backing out of the American-only tax in future years.

iv. <u>Credit Carbon Capture and Storage, But Not Use</u>

Like EPA regulations giving a credit for algal fuel that serves to subsidize industrial carbon dioxide emissions, and like a credit financing petroleum extraction via “enhanced oil recovery,” a tax credit for the *use* of carbon dioxide creates a perverse incentive, if the goal is to reduce industrial carbon dioxide emissions. There is no harm, and can be a lot of good, from incentivizing the capture and permanent storage of fossil fuel carbon dioxide emissions. Indeed, capture and storage is a vital element of a successful strategy to contain global warming. This practice puts the fossil fuel’s carbon dioxide back where it came from: inside the earth.

The Tax Reform Act of 2017 created a new credit for the *use* of carbon dioxide, set forth in section 45(Q) of the Tax Code. AFCWFFT repeals this whole capture, storage and use provision in favor of a simpler one granting a credit for carbon capture and permanent storage, but not use. **SECTION 202(b)** (repeal of 45Q **AT PAGE 38)** and **NEWLY CREATED TAX CODE SECTION 9907 AT PAGE 34**. If there is a sound and profitable business reason for using carbon dioxide to aid in enhanced oil recovery once the carbon dioxide has been captured or for some other purpose, then the free market will allow it to happen, without need for the encouragement of a governmental tax credit, which only serves to draw private funding away from sound renewable energy and towards more expenditure on industrial production of carbon dioxide by fossil fuel refining.

e. Eliminate All Other Federal and State Regulations Governing Carbon Dioxide Emissions

The foregoing are examples of the problem that arise inevitably when Congress, state legislators, and federal and state agencies pick winners and losers by the award of credits, subsidies, allowances and set-asides. Those that fall outside the definitions set in law lose, even if they come along later with better products. Their exclusion prevents them from attracting private funding, because funders, acting prudently, want to put their money into enterprises that have the government's blessing, rather than those that do not.

Therefore, to create a more perfect market, which is the only way that Adam Smith's invisible hand will be able to work its magic and a carbon tax will succeed in solving the problem, AFCWFFT, by legislative fiat, repeals all federal and state regulations of carbon dioxide emissions. These provisions are part of **TITLE II, OPENING THE ENERGY MARKET TO MORE COMPETITION**. See, specifically, **SECTIONS 202, 204 AND 207 AT PAGES 37 - 41.**

It almost goes without saying that any effort to eliminate governmental preferences that distort the market's carbon accounting choices must start by eliminating credits and subsidies for fossil fuels, which AFCWFFT does in **SECTION 202 AT PAGE 37**.

f. Preempt State Law Credits, Subsidies, Allowances, Set-Asides, and Targets

For the twin reasons of eliminating competing and conflicting policies and the distorting effect that governmental preferences enshrined in statute and regulation have, AFCWFFT makes itself supreme in this field of law and expressly preempts state laws and regulations of all kinds concerning carbon dioxide emissions. This includes preemption, and therefore invalidation, of the cap-and-trade program to which California and other states have joined and all state-level credits, subsidies, allowances, set-asides, and production targets for specific fuels and enabling technologies, such as biodiesel and ethanol. AFCWFFT includes a back-up, generalized preemption clause that is broad in scope. **SECTIONS 205 and 207 AT PAGES 40 - 41.**

g. Eliminate EPA Authority to Regulate for Carbon Dioxide Emissions

An absolute requisite for support by any Republican for a fossil fuel tax is that EPA's authority to regulate carbon dioxide emissions under the Clean Air Act, affirmed in the 2007 Supreme Court decision *Massachusetts v. EPA*, be curtailed. AFCWFFT embodies a comprehensive approach, cutting across industries and borders, to limiting further atmospheric carbon dioxide accumulation by way of an enforceable worldwide, carbon tax. **SECTION 201 AT PAGE 37**. Trusting in its efficacy, there is no reason to maintain EPA's legal authority to regulate carbon dioxide, especially if AFCWFFT will only realize its promise if existing agency regulations are repealed.

Some environmentalists fear that weakening the Clean Air Act in this bargain will somehow render a carbon tax vulnerable to future legislative amendment and thereby gut the federal government of all authority over global warming. This fear proves to be irrational. There is nothing to keep a

Republican Congress and President from eliminating EPA's authority right now, but they have not done so. If a bipartisan coalition supports this bargain, then we can expect that the carbon tax will have as much staying power in the future as the Clean Air Act has had to date.

h. Leave Little to Chance to Agency Regulation

Congressional statute did not compel the EPA to adopt the Tailpipe Rule favoring petroleum as the measure of fuel economy and greenhouse gas emissions. Congressional statute dating back to the first CAFÉ law in the mid-1970's has been vague about the kinds of standards the Agency should adopt to implement the law. This opening allowed petroleum-aligned interests to influence the original EPA rulemaking in 1975 and make the Tailpipe Rule the standard followed from one agency rulemaking to the next over the ensuing forty years, most recently jumping during the Obama Administration from fuel efficiency to now greenhouse gas emissions standards.

Similarly, the statute authorizing the Renewable Fuel Standard did not require original land use documents contemporaneous to the statute's 2007 passage to make biofuel feedstock land eligible for tradable credits. Somebody told EPA to be strict.

To minimize the chance that the fossil fuel industry can capture agency rulemaking and undermine the beneficial purposes of AFCWFFT, this Act leaves little room for agency rulemaking. It defines the measure of carbon dioxide as the carbon mole fraction of the source material and it sets specific annual tax rate and increases. Definitions of **"ANNUAL TAX RATE" (AT PAGE 3)** and **"PRICE PER METRIC TON OF CARBON DIOXIDE" AT PAGE 11.** It gives a ready-made formula for the **"FOSSIL FUEL NET LIFE CYCLE GREENHOUSE GAS REPLACEMENT VALUE OF BIOMASS" AT PAGE 7**. It requires EPA to rely on this definition in drafting a standard form that biomass harvesters will use in calculating this value. **NEWLY CREATED TAX CODE SECTION 9903(f) AT PAGE 27**. It gives the Secretary of State specific criteria by which he must audit the compliance of other countries with the Act, leading to worldwide adoption of this remedial package. **SECTIONS 302(a) AND 303 AT PAGES 43 AND 46**.

Surely, there will be some need for a group like ASTM International's Petroleum Products Committee to devise new standards and specifications for testing samples of fossil fuel and biomass at their point of origin for their carbon mole fraction. EPA must adopt regulations governing biomass accreditation organizations. **NEWLY CREATED TAX CODE SECTION 9903(f)(2) AT PAGE 27.** And the record-keeping, reporting and penalty provisions are not fully stated in the Act, as it currently stands, meriting possible clarifying rule-making.

However, given the breadth and complexity of the issues covered in AFCWFFT, the scope left to rulemaking is purposefully modest. The trade-off, detail included in the Act that is normally left to regulations, makes for careful and attentive reading.

i. No Cap-and-Trade at the State, Federal or International Level

As stated repeatedly, the approach of AFCWFFT is to put faith in the market, as influenced by the tax, and to eliminate regimes, such as cap-and-trade, that cannot compare effectively with its comprehensive fossil fuel tax and regulatory reform. This faith means eliminating all regulations that create conflicting obligations and inhibit market supply and demand from functioning in the freest way around the world. This includes terminating all forms of cap-and-trade, including California's and the federal Renewable Fuel Standard, for the reasons described above.

Therefore, among other requirements, the Secretary of State's audit of participating countries' tax systems would compel other countries to eliminate their own cap-and-trade programs in favor of the uniform AFCWFFT and its package of policy reforms. **SECTION 302(a)(10) AT PAGE 45**.

8. Environmental Integrity Mechanisms Allow Uncertainty and Unwinding of the Tax

Some environmentalists, pining for the illusory certainty of an emissions cap under a cap-and-trade regime, favor inclusion of an "environmental integrity mechanism" ("EIM") in any carbon tax package. Depending on the results of EPA's biennial inventory of greenhouse gas emissions, if the tax had not succeeded in lowering emissions at the desired rate, then the EIM would take effect.

There are two types of EIM that would activate upon a report by EPA that emissions were falling short of the statutory goal. The first type would terminate the carbon tax and re-institute regulations, either automatically or by a package pre-ordained in the statute that would require additional Congressional action to deploy. The second type of EIM would simply raise the rate of the carbon tax upon a negative emissions inventory report by EPA.

The former proposal of re-instituting regulations if the carbon tax had not reduced greenhouse gas emissions quickly enough first gained a foothold in Rep. Carlos Curbelo's (R-FL) MARKET CHOICE carbon tax Act, introduced in July 2018. It would suspend all EPA greenhouse gas emissions regulations until 2025, whereupon they would automatically reinstate if actual emissions fell above the statutory goal. Regardless, these regulations would automatically reinstate in 2033, unless Congress acted to suspend them. Thus, the Curbelo bill sets a carbon tax to endure for 15 years.

Rep. Curbelo's MARKET CHOICE Act would also employ the second variety of EIM by making the rate of the carbon tax periodically dependent on the results of EPA's biennial inventory of greenhouse gas emissions. The carbon tax rate would rise at 2 percent per year above inflation, if greenhouse gas emissions were falling short of goals.

Rep. Curbelo's bill received some notice only because he is the first Republican to come out publicly in favor of a carbon tax, and not because it is a good bill, which it is not. It is a complete give-away to the petroleum industry, including eliminating the federal gasoline tax in favor of the carbon tax that would effectively raise the price of gasoline by a few pennies per gallon. However, seemingly

solely because this bill includes two versions of an EIM, EDF was initially inclined to support it, according to EDF's Director of Climate Policy.

We already know that regulations have failed to do the job. Once eliminated, why ever return to them? Why not just make the tax rate higher from the start, or increase at a faster pace, to ensure the desired policy outcome?

Instead, the problem with either kind of EIM is that it eliminates certainty for the market about whether the tax will continue, what the level of taxation will be, and whether businesses have to worry about also satisfying regulatory obligations lurking in the background that may reappear at any time after 2024.

In the writer's opinion, enshrining the possibility of renewed regulations and biennial adjustments to the tax rate based on the performance stated in EPA's greenhouse gas inventory also invites Congressional mischief oriented to undermining the broader legislation itself. For example, the statute establishing the Renewable Fuel Standard similarly included benchmarks for renewable fuels production. As soon as push-came-to-shove a couple of years ago, left to its own devices, EPA deviated downward from the statutory schedule.

Tying the legislation's longevity and tax rate to a specific pace of emissions reduction is a fool's game. If supporters of the Curbelo bill, or any other carbon tax bill containing an EIM, do not have confidence that the bill will succeed in tackling the problem without this hedging, then they should not adopt it. Global warming is not leaving our country and the world time to engage in experiments lasting 2 or 10 years.

POP Diesel cannot imagine business leaders agreeing to such a haphazard and unpredictable tax program. If they did, it would be with the cynical view that the tax could be abrogated at the earliest reflection point, at the first window of evaluation brought on by a biennial EPA inventory, in 2025, or sooner.

Far better from the standpoints of efficacy and politics, in POP Diesel's opinion, to put the certainty of the tax rate increases into the statute from its very beginning and to chart the course to a tax rate of theoretical infinity that will surely lead to net zero carbon dioxide emissions before that rate is reached (which AFCWFFT defines as $10,013 per metric ton of carbon dioxide, the equivalent of $100 per gallon of gasoline, by 2050).

PART IV. SHIFT PETROLEUM TO RENEWABLES

The transportation sector of the U.S. economy, dominated by petroleum, now contributes more greenhouse gas emissions to the atmosphere than any other, even more than energy production. Therefore, the market for transportation fuel must be opened to competition from renewable sources that regulations have, to date, shut out, such as pure jatropha plant oil diesel engine fuel, as described above. Once this happens, and facing a tax rate that will increase to infinity, the petroleum industry will begin to shift its money to support biomass development.

9. Eliminate All Subsidies for Fossil Fuels

The first step, however, is to **ELIMINATE ALL SUBSIDIES FOR FOSSIL FUELS**, currently amounting to $26 billion. This is stated at **AFCWFFT SECTION 202**, starting at **PAGE 37**.

10. Open the Petroleum Market to Pure Jatropha Plant Oil Diesel Engine Fuel

The Petroleum Products Committee of ASTM International sets fuel quality standards that most states incorporate by reference into their law determining what fuels can be sold in the state. POP Diesel engaged in good faith with this Committee over a three-year period, but the Committee proved unwilling to listen to POP Diesel's expertise on matters of vegetable oil fuel.

Instead, it took a number of actions to unjustifiably exclude this EPA-approved fuel from the market. POP Diesel's federal antitrust lawsuit against ExxonMobil and ASTM was dismissed largely without prejudice, the Company did not re-file, and the Federal Trade Commission declined to investigate. Since key state regulators serve on this Committee and others follow its lead, POP

Diesel's EPA-approved pure jatropha plant oil diesel engine fuel could find itself barred from sale in a number of states, for no reason other than petroleum and biodiesel industry predation.

Therefore, AFCWFFT states a fuel quality standard for POP Diesel's pure jatropha plant oil diesel engine fuel that would welcome it nationwide, provided this fuel runs only in engines that EPA certified as compliant for its use as satisfying non-carbon dioxide, criteria pollutants regulated separately by the Clean Air Act. **SECTION 206 AT PAGE 40.** This step will open the doors to competition from POP Diesel's renewable fuel source that is in theory capable of replacing all of the United States' petroleum diesel fuel needs by 2040.

11. AFCWFFT Is the Best Way to Shift Petroleum Money from Defense of Fossil Fuels to Replacing Fossil Fuels

Since all other carbon tax bills circulating on Capitol Hill would preserve most of the existing, failed regulatory framework and its skewing of the markets in favor of petroleum and fuels that blend in subordination to petroleum, they will not eliminate America's, and the world's, greenhouse gas emissions. Because AFCWFFT is the only proposal for actually ending anthropomorphic greenhouse gas emissions worldwide by 2050 by virtue of a tax rate that approaches the equivalent of infinity (discussed above) and America First international reciprocity and enforcement, it is also the only means by which petroleum money can be brought to bear to aid in this transition.

The petroleum and natural gas industry has all the money in the world to invest in renewable energy. An effective fossil fuel tax will prompt this industry to shift its money away from defense of its fossil fuel position to, instead, embracing renewable energy.

A report published in *Science* magazine describes how the Sahel and Sahara regions of West Africa can host massive solar and wind farms capable of fulfilling Europe's electricity needs and powering Africa's economic growth. From the same geographic area, POP Diesel can replace 22 percent of worldwide petroleum diesel supply with pure jatropha plant oil running in POP Diesel-equipped trucks and other medium- and heavy-duty engines.

Why isn't money flooding into these large-scale solutions? Because of disincentives created by the regulatory framework decried above: the petroleum industry presently does not have an incentive to shift its investments to them. It is easier for the petroleum industry to undermine competition than jump on board new and better ideas like using solar rays, wind farms, and plant oil to replace fossil fuels.

POP Diesel confirms the petroleum industry's active predation from its own, first-hand experience.[13] The petroleum industry will not give up its stranglehold on fuel supply unless and until it is forced to by an effective fossil fuel tax that makes the renewable alternatives irresistably attractive as targets for its investment.

Even if the petroleum industry remains hostile towards or indifferent to the best alternatives to their products like pure plant oil diesel engine fuel, there is plenty of other money standing by. There is presently more than $6 trillion in assets held by institutional funds in Europe, North America, and Asia that is seeking to divest of its fossil fuel holdings and invest in renewable alternatives. All that is needed is for the regulatory barriers and distortions to disappear and a fossil fuel tax to send the right signal.

PART V. INTERNATIONAL ORDER

12. WTO Compliance

As implied in **SECTION 304 AT PAGE 47**, AFCWFFT is compliant with World Trade Organization policies and Rules. Even the imposition of higher import duties on countries that did not join and enforce its regime of reciprocal taxes and penalties against non-complying countries is permissible under WTO law. Because the WTO has already recognized the exceptional challenge posed by global warming, the United States and other countries following its lead in adopting AFCWFFT would be eligible to seek a waiver from the WTO Ministerial Conference of the normal requirement of consensus. As such, pursuant to Article IX of the WTO Agreement, the United States could implement AFCWFFT with the approval of three-quarters of the WTO's membership.

[13] Anyone the author's age (57) or older will recall that the former name of Exxon was Esso, and its advertising jingle: "E-S-S-O spells Esso..." Esso stands for S.O., or Standard Oil, the company supposedly disbanded as a result of a federal antitrust lawsuit 110 years ago. At times, POP Diesel has felt like it has had an Exxon, or "X" on, its back for the last ten years.

13. Trade Tariffs Versus Fossil Fuel Tax

AFCWFFT rescinds the thirty (30) percent tariff that President Trump imposed on imports of solar panels in June 2018. As discussed below, it also presents an opportunity to extend his trade policy by replacing protectionist tariffs with a uniform incentive to "buy domestic."

a. Rescind Tariffs on Solar Panels

Eighty (80) percent of America's newly installed solar panels were being imported when President Trump imposed a 30 percent import duty on them in June 2018, causing the immediate cancellation of at least $2.5 billion worth of large installation projects. **SECTION 208 AT PAGE 42** rescinds these tariffs and denies the President authority to re-impose these specific tariffs through January 2025.

b. The Ultimate Buy-American Policy

Protectionist tariffs, in general, are a form of "buy local" policy for manufactured goods. Environmentalists started the "buy local" movement for food produce. President Trump has extended "buy local," in the form of "buy American," to manufacturing, although in a non-uniform way.

An internationally-reciprocal and -enforceable fossil fuel tax is the ultimate "buy domestic" or "buy local" policy, since it would in theory apply to all goods in commerce around the world. To the extent that imported goods and, in general, goods traveling from a long distance, rely on fossil fuels for their transport, the tax makes these goods more expensive than domestic or local ones.

If the issue were framed in the foregoing way, perhaps President Trump would be willing to accept AFCWFFT as a rational and beneficial extension of his trade policies. He could claim a victory for himself, the earth, and all its inhabitants.

PART VI. REVENUE

14. Allocation of Revenues

Title IV is Allocation of Revenues. **PAGE 49**. However, POP Diesel has left this blank. The Company does not take a position on what Congress decides to do with the revenue from a fossil fuel tax, other than to respectfully request strongly that it not devote any of the revenue to the specific, counter-productive purposes discussed in subsection (c) below.

Some options for what to do with $1.5 trillion include:

- General Fund, to reduce the federal deficit or make transfer payments
-Health care reform /insurance
- Infrastructure
- Entitlement reform
- Carbon dividends to every household or other tax cuts.

Some portion of the revenues from AFCWFFT need to be reserved to make payments for carbon capture and storage by persons who are not the responsible party for greenhouse gas emissions, per **SECTION 9907 AT PAGE 34**. Responsible parties do not receive a payment, but claim a credit against their tax obligation.

a. Carbon Dividend Payments Attract Republican Support

Republicans support the idea of a carbon dividend payment made equally to households more than other uses of this revenue. Ted Halstead, the founder and Executive Director of the Climate Leadership Council, argues that paying all the revenue quarterly in the form of household carbon dividends creates an entitlement that will make the tax-and-dividend difficult to do away with.

The recent experience of President Emanuel Macron's attempt to raise the French tax on petroleum diesel fuel, which sparked nationwide protests, supports the idea of returning the tax revenues to citizens promptly. Accounts in the press indicate that Macron's mistake was to dedicate the tax revenue to deficit reduction, rather than returning this revenue to citizens' pockets by one means or another.

b. Favor the Poor: Reduce Payroll Taxes and Increase Retiree Social Security, SNAP and Unemployment Benefits

Alex Brill of the American Enterprise Institute studied how reducing the federal payroll tax with revenue from a carbon tax would play in counties across the country: https://www.aei.org/publication/the-political-economy-of-a-carbon-tax-a-county-by-county-investigation/ He found that the effect was comparable in equity terms in counties that voted Republican versus Democratic, and that the average person in the average county would have at most a $100 swing in net income one way or another.

AFCWFFT's Title IV, Allocation of Revenues, is left blank for the politicians to fill in. If this writer had his druthers, he would allocate the revenues by reducing the federal payroll tax, plus increasing benefits going to two groups of people who may and will not, respectively, qualify for the payroll tax reduction: (1) Social Security retirees and (2) the unemployed. Adele Morris of the Brookings Institution and Aparna Mathur, now of the American Enterprise Institute, jointly wrote in favor of increasing SNAP payments with carbon tax revenue.

Last but not least, money should be reserved for worker-retraining to aid hard-hit coal mining areas.

c. Please Do Not Spend Revenues to Influence the Energy Market

A major accomplishment of the Act is to eliminate the distorting influence that government choices as between fuels and their enabling technologies have on the private market's ability to finance and make optimal selections in the transition to a fossil fuel-free future. POP Diesel cautions against spending revenue on the following items that will undermine this broad and leveling effect of the Act:

i. credits and subsidies for renewable energy and its enabling technology and infrastructure;

ii. tax breaks for energy-consuming information technology, and;

iii. federal agency research on new energy-saving technology.

i. Avoid Additional Credits and Subsidies for Renewable Energy

First, please avoid funding credits and subsidies for renewable energy projects and programs that Congress in the past has been fond of. (Senate Minority Leader Chuck Schumer published an op-ed in the Washington Post on December 6, 2018 calling for more renewable energy credits and subsidies. The Green New Deal proposed by incoming progressive House Members and backed by Senator Bernie Sanders would also inject government tax credits and spending into renewable energy technologies and infrastructure.).

No matter how wisely legislators think they can make these choices, POP Diesel's experience, described above in Sections 7(c) and (d) at pages 22 to 28 of this Memo, is that governmental favor defined in statute or regulations not only excludes the merit-worthy or superior technologies and fuels not selected, but causes private funding also to shy away from them. The fact of the matter is that we live in a private, free market economy that is four times bigger in size than its governmental sector. Let the free market exert its power and trust the collective wisdom of its innumerable participants, Adam Smith's "invisible hand," to arrive at the best solutions. Section 7(c) and (d), beginning on page 22 above, give specific examples of the disabling and distorting problems that arise when Congress or a federal agency favors specific fuel and energy sources and their enabling technologies, thereby defeating the free market purpose of a fossil fuel tax.

ii. Watch Out for More Tax Breaks for Energy Hog Industries, Like IT

Second, one way that the fossil fuel industry sees of getting around the tax is to encourage the consumption of energy by way of enhanced tax credits. Integrated circuitry embedded on silicon chips, the bedrock of all IT hardware and software, requires huge amounts of energy to manufacture, and of course, computers and computer networks like the Internet and the Cloud require more energy to run. The Information Technology and Innovation Foundation ("ITIF") wants revenue from a carbon tax to cover an increase in the Alternative Simplified Credit within the Research & Development Tax Credit from 14 to 40 percent, and to allow this credit to apply "collaborative research" outside the energy sector. A fossil fuel tax is valuable precisely for causing activities like chip development to bear the cost of their environmental harm. An enhanced tax break lowering the cost of such activity will defeat the purpose of a fossil fuel tax. Note that AFCWFFT does not propose to roll back any pre-existing level of tax credit for activity favored by ITIF.

iii. Federal Research on Energy-Saving Technology Distorts the Market

Third, federal agency research sends a signal to the marketplace prioritizing private finance and investment. All too often, this research goes towards making equipment and technology run more efficiently on fossil fuels, or on lowering the cost of fossil fuels by the use of their carbon dioxide emissions, both of which encourage continued reliance on fossil fuels at the expense of switching to renewable ones. All of the technologies for weaning ourselves from fossil fuels are already in existence, including carbon capture and storage. Any improvements of these technologies should be financed by AFCWFFT's freeing the market to make the best choices. Therefore, please avoid dedicating any revenue stream to funding the following, which at this point will serve mainly to perpetuate the era of fossil fuels:

- Advanced Research Projects Agency-Energy;
- Carbon Capture Research and Development Program of the National Energy Technology Laboratory, Office of Fossil Energy, Department of Energy;
- DOE Fossil Energy Research, Development, and Demonstration Program Areas, Coal Program Area (Carbon Storage);
- National Energy Technology Laboratory of the Office of Fossil Energy for the Research and Development of Direct Air Capture, and;
- Office of Electricity Delivery and Energy Reliability, Department of Energy.

PART VII. COMPETING PROPOSALS

15. All Other Carbon Tax Bills Favor the Petroleum & Natural Gas Industry in Multiple Ways

From POP Diesel's analysis of most of the carbon tax bills introduced in Congress in the last four years, each one includes many of the following provisions favored by the petroleum industry that renders it weak and even counter-productive:

1. Imposing the tax downstream, at the petroleum and natural gas refinery, so as to avoid an easy upstream measurement like the carbon mole fraction that can
   a. determine the tax based on a simple laboratory test of carbon intensity;
   b. permit international uniformity and application of the tax; and
   c. avoid resort to an agency rulemaking defining life cycle emissions that will be captured by fossil fuel interests. Section 2 above, beginning on page 6, addresses this topic.

2. Constructing major portions of the tax program in a way so as to require agency rulemakings for its implementation, each rulemaking of which can be influenced and captured by the petroleum and industry to narrow the law's effectiveness and undermine Congressional intent, rather than putting specificity into the bill (such as use of carbon mole fraction as the upstream measure of tax liability) that would avoid such rulemakings. Section 7(h) above, beginning on page 31, addresses this topic.

3. Starting the tax too low or raising it too slowly, necessitating an evaluative audit by EPA that would re-impose regulations, if emissions reductions were not meeting the schedule set forth in statute

(an Environmental Integrity Mechanism). The possibility of re-imposing regulations creates uncertainty and undermines the point and effectiveness of a fossil fuel tax.

Sections 3 and 8 above, beginning respectively on pages 8 and 32, address this topic.

4. Relying on a Border Carbon Adjustment that:

a. impossibly requires a federal official to decide if a foreign cap-and-trade regime is comparable to an American carbon tax (comparing apples and oranges);

b. applies the tax uniformly to manufacturers in high carbon intensity export industries, including, counter-productively, those who have switched to sources of renewable energy, thus removing any incentive for them to do so, and

c. introduces federal regulations and intrusion into foreign commercial transactions at an unprecedented scale;

all of which use of the carbon mole fraction and POP Diesel's America First approach would avoid.

Section 5(a) above, beginning on page 16, addresses this topic.

5. Failing to eliminate regulatory barriers to entry of new renewable fuels and enabling technologies, such as the counter-productive CAFE Car and Truck Fuel Efficiency Standards and the Renewable Fuel Standard, which AFCWFFT proposes to replace, respectively, with measurement of engine efficiency (defined as energy consumed per unit of work the engine puts out) and a uniform, international, biomass standard defined in the statute.

Sections 7(b) through (f) above, beginning on page 22, address this topic.

6. Failing to repeal federal fossil fuel subsidies worth $26 billion.

Section 9 on page 33 states this topic.

7. Failing to eliminate federal tax credits and subsidies that (a) favor select renewable fuels blending in subordination to petroleum and (b) by their very existence, block new renewable fuels from securing private funding to expand. Section 7(c) on page 22 gives an example.

8. Failing to repeal all state, federal and international cap-and-trade regimes. They are all less comprehensive than and function at cross-purposes to an internationally reciprocal and enforceable fossil fuel tax.

Sections 5 and 7(i) above, beginning respectively at pages 16 and 32, address this topic.

9. Failing to optimize nationwide switch-over to renewable energy by a failure broadly and expressly to preempt state law credits, subsidies and policies that occupy the same ground as the federal Act. Section 7(f) above, beginning respectively at pages 30, addresses this topic.

10. Adopting only a time-limited and partial suspension of EPA authority to regulate for carbon dioxide emissions, rather than a permanent and comprehensive one (covering mobile, as well as stationary sources), thereby creating uncertainty for businesses and consumers who have to make decisions about whether or not to switch to renewable fuels.

Section 7(g) above, beginning respectively at pages 30, addresses this topic.

16. Conclusion

This Memorandum does not address all aspects of the policy issues and legislative structure at stake. Therefore, the reader is invited to contact the author with follow-up questions.