

Implementing a Carbon Tax

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What are the intended environmental and fiscal impacts? (Why is this necessary?)

- Because the effects of climate change, and thus, global warming are widely viewed among the scientific community as imminent threats to the Earth's environment, I will not waste time detailing how climate change will continue to unfold within the next few years, decades, and centuries. Rather, I hope to highlight what can be done if we reduce our greenhouse gas emissions in a timely manner and in an efficient fashion.
- Coal, oil, and natural gas are the “big three” in terms of greenhouse gas pollutants. The radiative forcing done in the atmosphere, mixed with exponential concentrations of carbon dioxide (with its long effective resonance), leads to worldwide climate change. In order to slow the decay done by exponentially-increasing carbon emissions such as sea level rise, ocean acidification, fiercer fires, flooding, and hurricanes., we must enact an encompassing policy that not only discourages the use of fossil fuels but also incentivizes a green revolution. Reducing emissions would reduce the negative potency of climate and environmental changes. With a carbon tax, the biggest (and baddest — in an environmental sense) coal, oil, and gas companies at the primitive stages of production will have to pay more to the government for mining, refining, and manufacturing their fossil fuels. Meanwhile, as simple supply and demand sequences take shape, greener and more renewable sources of energy will begin to take the forefront, and the money leftover will be invested in green technologies such as solar power, wind power, and temporarily regulated fracking as a smoother transition from fossil fuels.

Why a carbon tax and not cap-and-trade?

- Cap and trade programs set a limit on the air pollutants a company may emit and also allows for trading of leftover allowances (if they emit less in a faster time). On the other hand, a carbon tax involves the “cap” portion of cap and trade with more concentration on this effort, and also it recycles the revenue to the public and renewable energy instead of back to fossil fuel companies

- There currently exist 25 countries that have implemented a national carbon tax. 11 states within the United States have enacted a cap-and-trade system, similar in the fact that they both have the goals of reducing emissions, developing revenue for government use, and incentivize the development and use of low-carbon or carbon-neutral technologies.
- However, the major difference between cap-and-trade systems and carbon taxes is that the cap-and-trade system design tends to have more innate, surface-level difficulties than carbon taxes such as needing stronger emissions caps, allocating exorbitant emissions allowances, and volatility in allowance prices due to a fluctuating economy. On the other hand, Sweden is a prime example of the successes of implementing a less complicated and more stringent carbon tax system: with a tax at about \$125 per ton of carbon, they have reduced 25% of emissions since 1995. Not only this, but their economy has boomed; there has been a 75% expansion nationwide.
- That begs the question: why don't we adopt something like this? As icing on the cake that is our future climate endeavors, a 2008 report from the nonpartisan Congressional Budget Office states that "a tax on emissions would be the most efficient incentive-based option for reducing emissions and could be relatively easy to implement."

What are the major components of a carbon tax?

- This is truly an interdisciplinary project: one that will take the work of multiple experts from various fields. I am simply laying out a faint blueprint from which professionals will hopefully assess. Different types of economists, politicians, environmentalists, scientists, and mathematicians alike must come together to find a perfect formula that is economically feasible and ultimately profitable, favorable to constituents, nurturing to our environment, scientifically applicable, and mathematically correct.
- The pinnacle of the legislation must be to obtain balance and adaptability. First, the projections and goals must put transition first with somewhat cheaper tax rates and room for change depending on the national market. As time goes on, trends in prices and supply and demand become solidified, there must be addendums in place to allow a raise in the tax rate to further deplete the use of fossil fuels.
- In my research, I found that the tax could either be based on British thermal unit (BTU) of heat content (measure of power) or tons of the actual fossil fuel source. I found that the

most representative way would be based on dollars per BTU of heat content for coal, oil, and gas — this measurement would most accurately reflect the carbon emissions from the specific amount of fossil fuel extracted, rather than include the entire mass of extraction itself — some of which may not even be used or accounted for. BTU of heat content allows for a more mathematically and scientifically precise measurement of the carbon footprint.

- Specifics should be confirmed by experts such as those mentioned above. Modeled partly from work done by the CBO, if roughly a \$25 per 12,000 BTU of heat content tax were to be inputted, with an annual inflation-adjusted increase rate of about 2%, there would be over a \$1 trillion increase in revenues federally.
- Based on the projections of some organizations such as the CBO and World Wide Fund for Nature, this plan would anticipate a roughly 10% decrease in projected emissions by 2035. For reference, from 2008-2015, British Columbia's emissions had a yearly decrease of about 0.7%; and from 1990-2019, Sweden's emissions had a yearly decrease of about 0.8% with their respective carbon taxes. Following this trend, with a yearly decrease of 0.75%, emissions could be expected to decrease by somewhere around 7.5%. Taking both projections into account, this goal aims to decrease emissions 7.5% to 10% over the next ten years.
- Let's face it: we live in a heavily capitalistic-run society in the United States, and the topic on everyone's mind consequently seems to be, "what's happening with my money?" Thankfully, with this plan, there will be less volatile fluctuations in prices and supply that affect families and businesses throughout the American economy such as we have seen with overreliance on fossil fuels. In addition, the revenue from the tax on corporations will be recycled into the pockets of not only those revolutionizing green technology, but also the citizens over which the fossil fuel industry has control. As carbon-heavy products rise in price, consumers will lean more toward renewable energy as a source. In addition, a small dividend could be enacted as a part of the bill, with more money provided to low-income families based on each family's annual income.

How does something like this get passed in legislature?

- Arguably as important as the piece of legislation itself is the manner in which it must be passed in Congress. In order for this plan to be fruitful, lots of politics must be involved.
- One proposal that I would recommend is establishing individual, statewide carbon taxes that all look and act similarly to one another. With coordination from governors, senators, representatives, state representatives, and constituents, there could be a somewhat unanimous goal to be reached in each state. Then, another spoke on the wheel of this plan is to take this carbon tax nationwide: take the average tax cost, annual increase rate, and wells where the revenue will end up from each state, and apply it to a national piece of legislation to be passed and enforced.
- Canvassing and lobbying for this bill must involve cooperative efforts and support from across the aisles and in between, including representatives from multidisciplinary experts within the governmental realm such as the bureaucratic EPA and CBO, congressional committees, and individual candidate endorsements.
- This is why adjustment and gradual change is crucial to this piece of legislation appealing to as many members of Congress as possible. Fiscally, it should appeal to all of them in the long run as the increasingly exorbitant cost of finite fossil fuels weighs too heavily on their pockets, giving it a leg up. One of the pitfalls might be if a candidate is endorsed by one of the taxed corporations, in which case there should be another outside source allied with this movement such as a solar power company that can take the fossil fuel company's funding slot.

What's the timeline for this?

- This is a rough estimate and is subject to change based on the combined suggestion of experts in various fields, though it should be followed as strictly as possible in order to reap results.
- 2020 - 2022 → Confer with experts, draft initial bill, gain political support
- 2022 - 2023 → Canvas for bill and support, fix imperfections, start making connections with green energy workers
- 2024 → Present bill to Congress, pass bill (easier said than done)

- 2025 → Implement and enforce first phases of the carbon tax, monitor progress and any problems, make amendments as needed
- 2025 - 2035 → Continue to monitor and amend the law as needed (tax amount, revenue distribution, etc), track emissions progress, instigate more intense partnerships with renewable energy corporations and the United Nations, continue to increase tax rate annually