



Does a Carbon Tax Support Prosperity?

by Vance Ginn, Ph.D.,
and Megan Ingram

Key Points

- A carbon tax is a government-set price on carbon dioxide emissions.
- An assumption for a carbon tax is the price paid for a final good does not reflect the supposed social cost from carbon dioxide emissions released producing the good.
- Congress and state legislatures should not shackle prosperity with a carbon tax because it is based on flawed assumptions and would result in large economic costs.

Executive Summary

The media and some researchers promote a carbon tax as a market-based policy mechanism to reduce human-induced carbon dioxide emissions while limiting adverse economic effects. Proponents of government placing a price on carbon rely on several key assumptions in their modeling to find economic benefits.

There remain questionable fundamental issues about the way carbon dioxide affects the climate. Observed temperatures by sophisticated technologies greatly and consistently conflict with today's widely accepted, although highly questionable, scientific consensus about the effects humans have on climate change. Equally as important is the correlation between carbon dioxide levels and human well-being. As carbon dioxide emissions have risen, so too have population, life expectancy, and income—three prominent indicators of human progress.

Proponents are calling a carbon tax a “free market” solution to solve supposed anthropogenic climate change. Unfortunately, a tax on carbon means a tax on energy, which is essentially a tax on all goods and services. This means people will have to pay more for everything they do, eat, wear, and use. Such an economy-wide tax is a direct government interference in the true free market, which unencumbered allows for suppliers and consumers to voluntarily exchange and mutually benefit from an efficient allocation of resources.

In fact, a carbon tax is not a free market solution. Two real life examples of a carbon tax gone wrong in British Columbia and in Australia show that its potential effects include skyrocketing household electricity prices and increasing unemployment. Other examples of heavy-handed energy regula-

tions across the world prove that these mandates make it harder for people to prosper. On the other hand, the free market makes abundant, affordable, and reliable energy possible and leads the way to cleaner technological innovation.

We examine the research on the assumptions and predicted economic effects of a carbon tax. Research supporting the imposition of a carbon tax are based on modeling with flawed assumptions and the tax itself would cause crippling economic costs. Congress and state legislatures should not shackle prosperity with a carbon tax.

What is a Carbon Tax? An Economic Explanation

A carbon tax is a government-determined price on carbon dioxide (CO₂) emissions. A critical assumption supporting a carbon tax is that the price paid for a final product does not reflect the environmental and social costs of CO₂ emissions created when producing the product. This assumption posits, for example, that the price paid for a piece of fruit at the grocery store does not account for the CO₂ emissions involved in its growth, harvest, preservation, or transport. Economists call these indirect costs “negative externalities” resulting from what is known as “market failure.” In other words, proponents of the carbon tax claim that market prices in the private sector do not appropriately reflect a product's social cost.

In 1920, English economist [Pigou](#) advanced the idea of taxing negative externalities to force prices to reflect social costs. The optimal “corrective” tax, also called a Pigouvian tax, equals the social marginal damages. Some claim CO₂ emissions create these social damages or negative externalities in the same way that conventional pollutants, such as sulfur dioxide or ozone, do. They con-

continued

clude that a solution is to monetize the “social cost of carbon” (SCC) through a carbon tax ([Murphy et al., 2](#)). In our grocery example, this could mean taxing the CO₂ emissions involved at each stage of the piece of fruit’s journey to the store, resulting in a higher price paid for it at checkout. Supporters claim a carbon tax would help firms reduce CO₂ emissions because raising production costs would incentivize firms to innovate and adopt cleaner technologies.

Numerous legislators and groups have proposed variations of a carbon tax. One such proposal is from the [Climate Leadership Council](#). The council suggests a federal tax of \$40 per ton of CO₂ emissions on the initial emitter (e.g., a mine or port), and to return the tax collected through carbon dividends to American families. The proposal includes an initial dividend payment of about \$2,000 for a family of four. The idea would be to help offset families’ higher utility bills resulting from the carbon tax. This tax, along with the dividend, would increase steadily over time to further reduce CO₂ emissions and mitigate their assumed effects on climate change, “sending a powerful signal to businesses and consumers, while perceivably generating revenue to reward Americans for decreasing their collective carbon footprint” ([1](#)).

The Carbon Tax’s Flawed Assumptions

Flawed Assumption: Anthropogenic Carbon Dioxide Emissions Drive Climate Change

The Earth’s climate is always changing. So are global temperatures and weather. The question is to what extent humans affect climate change by generating emissions of CO₂.

Cook et al. claim there is a “scientific consensus” whereby 97 percent of climate scientists agree that human activity causes climate change ([1](#)). However, this claim is misleading. It is based on one individual’s review of published papers that agreed with his premise about climate change and man’s role in it. In other words, it was not an actual calculation of the scientific communities’ view on climate change (Epstein 2014, 109-111). In short, the failure of this much quoted, but inaccurate claim, is that it was based on only a small share of climate scientists in the sample surveyed and a misapplication of the scientific method of expanding empirical knowledge by observations and measurements in order to test hypotheses.

The research of Dr. John Christy challenges the assumption that anthropogenic CO₂ emissions contribute to catastrophic climate change. Christy is the distinguished

professor of atmospheric science and director of the Earth System Science Center at the University of Alabama in Huntsville, and state climatologist in Alabama. He also served as lead author, contributing author, and reviewer of the Assessment Reports of the United Nations’ Intergovernmental Panel on Climate Change (IPCC). During [Christy’s](#) 2016 testimony before the U.S. House Committee on Science, Space & Technology, he concluded:

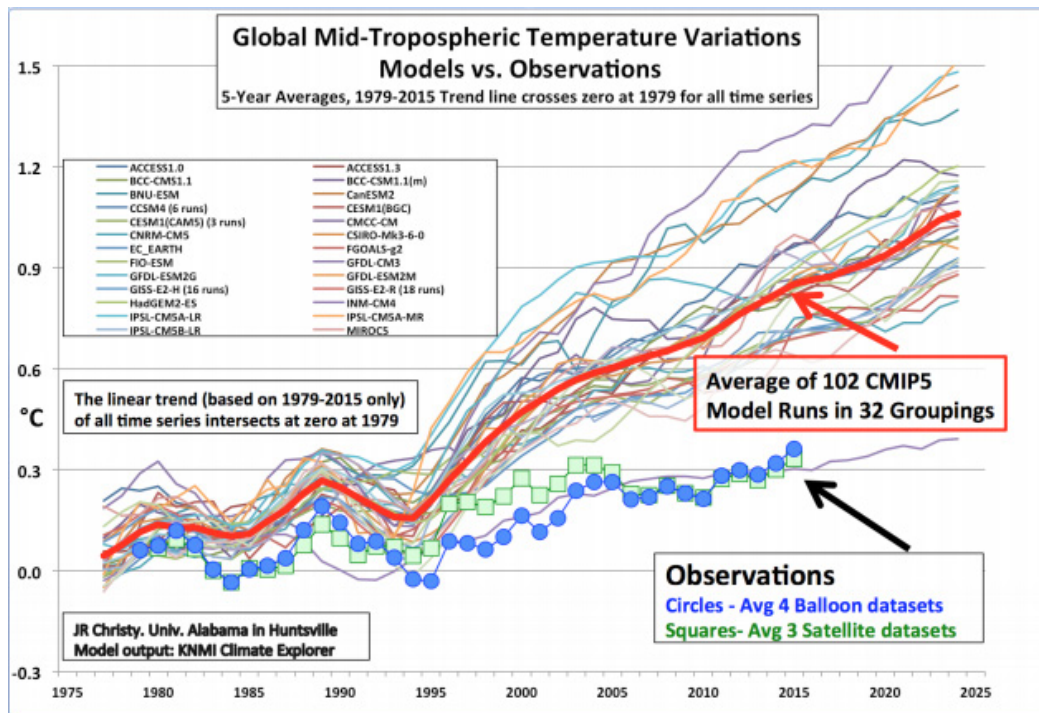
Climate change is a wide-ranging topic with many difficulties. Our basic knowledge about what the climate is doing (i.e. measurements) is plagued by uncertainties. In my testimony today I have given evidence that the bulk atmospheric temperature is measured well-enough to demonstrate that our understanding of how greenhouse gases affect the climate is significantly inadequate to explain the climate since 1979. In particular, the actual change of the fundamental metric of the greenhouse warming signature—the bulk atmospheric temperature where models indicate the most direct evidence for greenhouse warming should lie—is significantly misrepresented by the models. Though no dataset is perfect, the way in which surface datasets have been constructed leaves many unanswered questions, especially for the recent NOAA update which shows more warming than the others. Finally, regulations already enforced or being proposed, such as those from the Paris Agreement, will have virtually no impact on whatever the climate is going to do.

Christy provides a figure that we show in **Figure 1** (next page) highlighting how climate change models are consistently wrong about changes in global temperature ([12](#)).

If the “scientific consensus” holds, this period with the “highest concentration of greenhouse gases” should have contributed to greater global warming. However, the models’ average rate of warming was 2.5 times greater than actual observations, which were essentially flat ([Christy, 12](#)). This is one of many perspectives at odds with the scientific consensus. If questions remain about the extent humans contribute to climate change and changes in temperature, then the need for a carbon tax should also be questioned.

Flawed Assumption: Carbon Dioxide Emissions Are a Costly Pollutant

Carbon dioxide is necessary for life on earth. Without it, plants, animals, and humans alike would not exist. Moreover, carbon-based fossil fuels have supported unmatched economic prosperity since the Industrial Revolution.

Figure 1. Observed temperatures have been consistently below those modeled

Source: Dr. John Christy's testimony ([12](#)).

Throughout the 20th century, increasing energy consumption has been associated with faster economic growth and linked prosperity. **Figure 2** (next page) illustrates how global CO₂ emissions, some of which are from combustion of fossil fuels, are correlated with three prominent indicators of human progress over the last 250 years: global population, average life expectancy, and output per person.

For example, there is a historical correlation of over 95 percent between increasing use of fossil fuels and rising economic growth over time (White and Moore, 120). As income rises, so does improvement in most indicators of human well-being including hunger, infant mortality, education, child labor, and economic freedom.

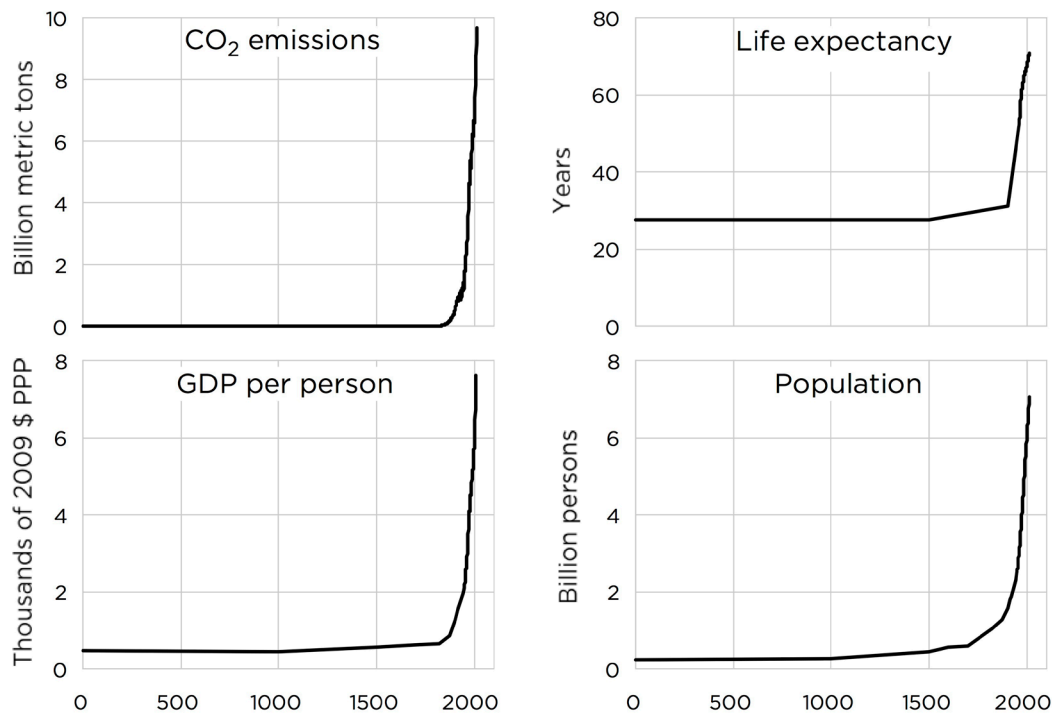
Further, real environmental success can and should be measured by the success already achieved in the reduction of pollutants that, in contrast to CO₂, are harmful to human health under certain exposures. In the U.S., polluting emissions began to decline during the 1960s, even before Congress passed the Clean Air Act (CAA) of 1970 ([EPA 2018](#)). **Figure 3** (page 5) shows six common pollutants (carbon monoxide, lead, nitrogen oxide, volatile organic compounds, particulate matter, and sulfur dioxide) declined as prosperity, fossil fuel use, and CO₂ emissions increased ([EPA 2016](#)).

History shows the way to reduce actual pollutants is through technological innovation. Competitive free markets help increase the capital needed to build powerful pollutant-reducing technologies, leaving behind inefficient processes. Because the more you tax something the less you get of it, costs of a carbon tax will likely result in less capital available for more productive economic growth and innovation that could reduce actual pollutants. These results derive from the flawed assumption that CO₂ emissions are pollutants when in fact CO₂ emissions—whether natural or human-induced—are necessary for life on earth.

Flawed Assumption: Modeling of Climate Change Accurately Reflects Economic Costs

Governments use available science, discussion, and recommendations to implement and enforce regulatory climate policy. Unfortunately, politics and methodological bias have become two primary drivers of climate science. Therefore, we must closely scrutinize the science and public policies that may harm individuals, particularly the poorest among us ([Dinan, 1-3](#)).

The United Nation's IPCC, considered the world's official authority on climate science, uses models that attempt to calculate a monetary value for the social cost of carbon

Figure 2. Prosperity is a relatively new phenomenon

Source: [Alex Epstein](#)

(SCC). Specifically, IPCC's assessment process attempts to quantify human influence and socioeconomic development, an inherently biased effort. These values are then plugged into large, multivariate climate models to estimate results. These manufactured scenarios lead to the following fundamental challenge: "The veracity of projections of future climate currently rests on very subjective ground" ([Lloyd and Schweizer, 2050](#)). Governments across the world, including the U.S. government, consider SCC estimates from these climate models and others when deciding environmental policy.

Three interlocking elements contribute to potential biases of modeling the economic costs of climate change:

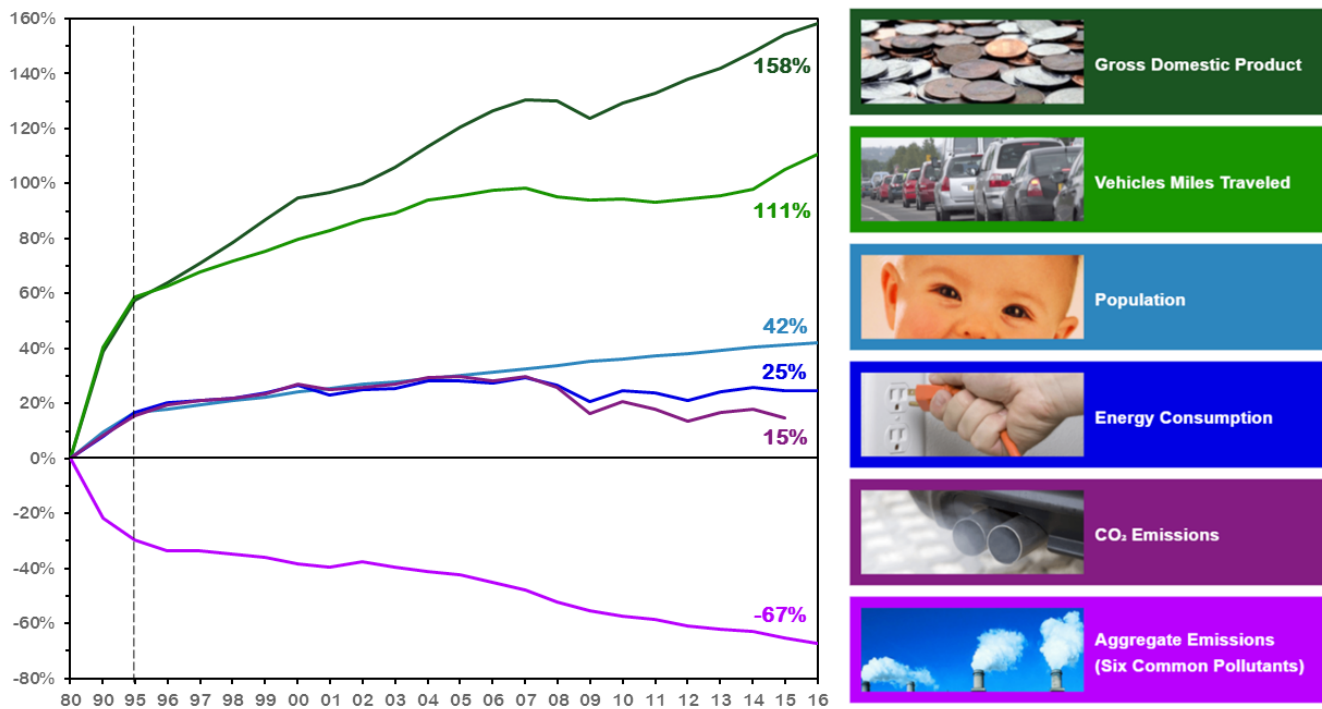
- 1) **Social cost of carbon (SCC)** attempts to "value the climate impacts of rulemakings" worldwide ([EPA 2017](#)). Murphy et al. defined the SCC "as the present value of the net future external damages from an additional unit of CO₂ emissions" (2), meaning an analyst's view of what future problems are monetarily worth today.

This estimated SCC reflects global damages of climate change. Which means that a SCC-based cost-benefit analysis for the world's population misleadingly pres-

ents benefits as purely American. "The analyst is contrasting benefits accruing mostly to non-Americans with costs borne mostly by Americans" ([Murphy et al., 2](#)). Whether Americans should bear climate change mitigation for the world is a question worth asking.

The uncertainty and subjectivity surrounding the SCC from predictive models make this component of modeling questionable at best. This is especially important when considering that the federal government uses the SCC when implementing policies, such as the carbon tax.

- 2) **Integrated assessment models (IAMs)** are used by researchers to estimate the SCC that influences policy-makers' decisions. IAMs are large computer simulations that can combine global climate and economic models to project the marginal effects CO₂ emissions on human welfare far into the future, often for centuries. The outputs of the simulations are highly sensitive to the assumptions in the model. Given researchers simplify models to test a hypothesis, their simplifications often diverge from reality in the short run, making the long run predictions unrealistic.

Figure 3. Pollutants decline as CO₂ emissions and prosperity expand, 1980-2016

Source: [EPA 2016](#)

Ackerman et al. noted IAMs use a “social welfare function” (300) that “assign monetary value to the benefits of climate mitigation on the basis of incomplete information ... concerning the monetary worth of human lives and ecosystems, while downplaying scientific uncertainty about the extent of expected damages” (298-99). The subjective nature of attempting to quantify a human life’s worth is a major limitation of IAMs, which is a reason Pindyck notes that they “can be used to obtain almost any result one desires” (5).

IAMs are also flawed because, while they claim to estimate the net economic effects of CO₂, they do not consider the environmental and full economic benefits of CO₂, like plant growth, that can reduce starvation and increase human capital, contributing to more economic growth. Moreover, these models do not consider the economic costs of policy changes used to mitigate supposed environmental damages. By not considering these economic costs, the reduction in economic output and associated innovation from an imposed carbon tax, or other environmental regulations, can substantially bias the results.

Using this flawed approach of IAMs with exaggerated SCC estimates and much uncertainty ([Ackerman et al.](#)) leads to many questions regarding harmful environmental and economic policies.

- 3) **Discount rates** are used to calculate the future effects of climate change by converting projected future damages to today’s dollar value. Researchers often use subjective measures of discount rates instead of observable market rates ([Murphy et al., 6-7](#)).

Even a small change in a discount rate has a large effect on the SCC and resulting policy implications. For example, an analysis estimated for 2020 that a 2.5 percent discount rate yielded a SCC of \$62 per metric ton of CO₂ emissions while a 5 percent rate resulted in only \$12 per ton ([IWG, 3](#)). The lower the discount rate, the more the emphasis is on the current population paying for future generations.

A discount rate not based on market rates is a poor measure because it can highly exaggerate the SCC that can lead to costly policies.

A purpose of public policy is to establish a stable framework for consumers and entrepreneurs alike based on market factors. A carbon tax, created and implemented by arbitrary governmental decisions, does not support this purpose because it is not congruent with a free market.

Spencer said, “Until climate science is funded independent of desired energy policy outcomes, we can continue to expect climate research results to be heavily biased in the direction of catastrophic outcomes” (22). These questionable elements of modeling the global climate and economic effects of CO₂ emissions suggest the policy implications are wildly dependent on flawed assumptions, making their results and conclusions highly questionable. In fact, President Trump issued an [Executive Order in 2017](#) that disbanded the Interagency Working Group on the Social Cost of Greenhouse Gases and withdrew all technical documents developed by the group because they no longer represent “governmental policy.” This is yet another reason why the push for a carbon tax is highly questionable.

Flawed Assumption: Taxing Carbon Is a Free Market Solution

One of the unique elements surrounding the discussion of a carbon tax is the claim that it is a free market solution to solving climate change: something for free-marketers and something for environmentalists.

A free market is where suppliers and consumers voluntarily exchange in a marketplace whereby both mutually benefit from an efficient allocation of resources. A carbon tax, however, is direct government interference in that marketplace, leading to inefficiencies that plague economic prosperity. Even more importantly, a tax on carbon would result in *economy-wide* inefficiency across all sectors. This is because, unlike actual pollutants, CO₂ emissions are ubiquitous in all human activity and therefore are a by-product of all industrially produced goods. A carbon tax would directly and substantially decrease efficiency and consumer choice in the marketplace. Further, a carbon tax would aid certain corporations seeking to weaken competition through policy as well as other interest groups.

A purpose of public policy is to establish a stable framework for consumers and entrepreneurs alike based on market factors. A carbon tax, created and implemented by arbitrary governmental decisions, does not support this purpose because it is not congruent with a free market. Instead, a carbon tax is based on what Goklany (2001, 2-3) refers to as the “precautionary principle.” This is the idea of implementing a policy of being safe rather than sorry without an awareness of all information. In this case, doubts surround the costs of human-caused climate change, whether CO₂ emissions contribute to it, and whether these emissions are a pollutant. Goklany provides a cautionary tale about implementing policy based on this precautionary principle:

Those policies, advanced as precautionary in order to protect the environment, provide vindication for the proposition that the road to hell is paved with good intentions. The wide gap between outcomes and intentions results from the fact that policies favored by conventional environmental wisdom are credited with the public health and environmental risks they might end, reduce, or forestall but are not debited with the risks they might create, increase, or prolong. Just as fiscal honesty demands an accountant to record fiscal debits as well as credits, intellectual honesty demands that evaluation of environmental policies consider both sides of the risk ledger (94).

The path to a cleaner, healthier environment with reliable, portable, and affordable energy is from technological advancements through free enterprise, not from governmental policy like a carbon tax. Places where the carbon tax has already been tried provide insight into its potential effects.

Murphy et al. note two examples of a carbon tax that was implemented in Australia and British Columbia (16-20). In 2012, Australia set a \$23 carbon tax per ton of CO₂ equivalent, raising it to \$24.15 per ton the next year. The tax led to the “highest quarterly increase on record” of household electricity prices, and by July 2014, the carbon-pricing scheme was formally ended. British Columbia’s carbon tax is touted as the best worldwide example, with claims it reduced CO₂ emissions while leaving the economy unharmed. However, the results tell a different story: minimal benefits with potentially substantial damage. In 2008, an initial carbon tax of 10 Canadian dollars per ton of CO₂ equivalent eventually ramped up gradually to 30 Canadian dollars per ton (equal to roughly \$24 per ton). Outcomes did not reflect expectations. Gasoline consumption was little changed compared with the expectation of a large

decline. Unemployment increased more than expected as the higher cost contributed to less economic activity and job creation.

Consider the effects of heavy energy regulations in Europe compared with a market-based approach in the U.S. In 2005, Germany passed a law that was one of the world's most stringent mandates for renewable energy. These mandates were exacerbated by the Fukushima disaster in 2011 when Germany shut down half of its 17 nuclear reactors with intention of phasing the rest out by 2022 and turned to coal ([IER](#)). The results show that between 2009 and 2013 Germany's CO₂ emissions increased by 9 percent while electricity prices soared 54 percent. In contrast, U.S. emissions increased by only 1.3 percent without such a law (White and Moore, 64-65).

The EIA notes that U.S. carbon intensity has been decreasing since 1949 ([2017a](#)) with energy-related CO₂ emissions reaching their lowest levels in 2016 since 1992 ([2017b](#)). In addition, the EIA ([2018](#)) estimates that from 2005 to 2017 CO₂ emissions in the U.S. have declined 14 percent with 2019 levels expected to be 13 percent below 2005 levels. These declines in emissions derive in large part from the increased electricity generated from natural gas, which "is a less carbon-intensive fuel than either coal or petroleum" ([EIA 2018](#)). These results have not been from energy mandates, but rather from improving technology and increasingly efficient industrial processes like hydraulic fracturing to produce natural gas.

Energy abundance makes it possible for people to thrive and prosper. When our basic needs are met, we have more time to make better choices. Time and choice allow for creative thought, innovation, and the development of sophisticated technologies that ensure clean water, air, and environment through free markets instead of government intervention.

Results of a Carbon Tax

A Carbon Tax Would Greatly Diminish Economic Prosperity

The consumption of energy is a factor underlying everything we do. Fossil fuels supply more than 80 percent of the world's energy ([EIA 2017c](#)). We use energy in the production and consumption of all goods and services. Thus, a carbon tax would increase the cost of cement and steel, as well as food, clothing, transportation, and home heating and cooling. There is a clear result of a carbon tax in the

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literature: A carbon tax makes energy production more expensive. Horowitz et al. find that a \$49 carbon tax could increase oil prices by roughly \$21 per barrel ([7](#)), which other research concludes will lead to higher fuel prices ([Bumpass et al.](#)) and impoverish many people ([Morgan](#)).

Affordable, reliable, and versatile energy supports economic growth and human well-being. Prosperity is more than just a word. It captures all the life-improving comforts that we often now take for granted. Hospitals that stay powered, refrigerators that stay on, lights that turn on as needed, heat that powers up when it is cold outside—these are all parts of a safe and prosperous world. Concentrated, reliable, abundant, and versatile energy in carbon-rich energy sources remain essential for economic growth worldwide.

Taxing those energy sources will diminish living standards worldwide and consign to poverty the estimated 1.1 billion people without access to affordable energy ([Odarno et al., 5](#)). Without access to affordable, reliable, and safe electricity, "an estimated one billion people receive poor health-care in clinics and hospitals where vaccines and medicines cannot be refrigerated and equipment cannot be sterilized" (White and Moore, 144). The [United Nations](#) notes today "2.1 billion people lack access to safely managed drinking water services," "4.5 billion people lack safely managed sanitation services," "more than 340,000 children under five ... die annually from diarrheal diseases due to poor sanitation, poor hygiene, or unsafe drinking water—that is almost 1,000 per day." Hindering affordable, reliable, and portable energy through a carbon tax would likely exacerbate these devastating statistics.

Any action by Congress should look at all the costs and benefits of using our abundant domestic energy resources. Such a review is critical, particularly in light of the fact that Congress never found CO₂ emissions to endanger public health or welfare.

A Carbon Tax Swap Would Result in Social Engineering

The objective of a carbon tax is to change human behavior, commonly called social engineering, to produce less CO₂ emissions and thus reduce the environmental and economic harm allegedly caused by human-induced climate change. By raising the price of emissions, prices of fossil fuels increase. Higher prices of using the cars we drive and the lights we use in our homes influence our decisions. Hence the term social engineering, whereby government policy attempts to engineer society. The generation of more tax revenue is secondary.

Governments impose taxes to collect funds for programs first determined by voters and rent-seeking politicians, such as safety, national defense, courts, and other basic government services to preserve liberty. The tax imposed should create the least distortion (deadweight loss) to markets so there are mutually beneficial exchanges. Taxes used for other purposes, such as Pigouvian taxes like the carbon tax, are imposed to change human behavior because of the allegation that markets fail to allow rational people to take into account all of the costs and benefits of their actions. Therefore, governments should nudge them in a chosen direction. However, what is really going on with the carbon tax and related government interventions is that a small group of “experts” in government and academia join with special interest groups to overturn the decisions of millions or billions of market participants because they think they have a better solution for humanity.

This sort of tax is therefore problematic because it forces the decisions of a few on the individual, which may lead to the

individual being worse off than without the nudge, and presumes it is better to be safe than sorry without considering all costs of a policy change. The carbon tax is poor policy in the form of social engineering that should be avoided.

Conclusion

Market decisions generally provide better, more efficient outcomes than government intervention. Calls for a carbon tax are based on flawed assumptions and climate models that have been proven inaccurate. Moreover, the proclaimed benefits of a carbon tax are not proven, yet the negative economic impacts of such a carbon tax are clear. Therefore, policy considerations should prioritize human needs and prosperity from the free enterprise system without a carbon tax or other costly environmental regulations.

Ending all energy subsidies and tax credits at every governmental level supports more efficient, dependable energy usage whereby innovation through creative destruction can continue to reduce emissions of pollutants. Moreover, reducing government barriers to competition through eliminating onerous regulation and business taxes paid by people will allow entrepreneurs more room to innovate to improve our well-being and clean the environment.

Ultimately, we need to stop apologizing, take pride in our accomplishments, and lead. Given that the role of taxation should be to fund government’s preservation of liberty and accounting for the likely huge economic costs, Congress and state legislatures should not hinder prosperity with a carbon tax. ★

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