

DECARBONIZING THE US ECONOMY: Pathways Toward a Green New Deal



The greatest challenge of the 21st century—the climate crisis—is here: The global community has just 11 years to cut emissions by 45 percent and must achieve carbon neutrality by 2050 to prevent temperatures from rising more than 1.5°C, according to climate scientists. We argue that decarbonizing at this rapid pace is not only possible, but that it will create jobs, improve economic growth, and promote equity. Such an endeavor, however, necessitates immediate action and a broad range of policy tools. We outline the three pillars of such an approach: 1) carbon pricing that ensures that we meet our emissions goals in an equitable way; 2) comprehensive regulations to promote decarbonization across the board; and 3) large-scale public investments.

We recognize that deploying these three pillars will require the US to overcome both political resistance and decades of skepticism surrounding government's ability to organize and finance large-scale projects. For nearly 50 years, flawed economic assumptions have guided American politics and policymaking, ultimately stunting action on this issue. Economists and policymakers argued that disrupting markets through environmental regulation or carbon taxes would cost too much in terms of economic growth; that government spending to decarbonize the economy would bankrupt our country; and that public investment would be ineffective and wasteful.

Combating climate change in the US and decarbonizing the economy will require a comprehensive social transformation, which includes dismantling the markets-first approach that has dominated policy decisions for nearly half of a century. Markets—while effective at reallocating resources at the margin—are bad at solving large-scale problems where economic activity across a wide range of areas must make expansive shifts in a coordinated way. The rapid transition of our economy—historically, wartime mobilization or industrialization, for example—to net carbon neutral is a sizable undertaking that will require a sizable, centralized actor: government.

We believe that the public sector must play the leading role in directing decarbonization and in a broader Green New Deal movement. In *Decarbonizing the US Economy: Pathways Toward a Green New Deal*, we outline a set of policy proposals that demonstrate how we can decarbonize the economy in ways that promote growth and ensure equitable outcomes. These sample policies show that decarbonizing the US economy can create quality jobs, reduce inequality, and tackle the existential threat of climate change.

It is within our power to collectively reshape our economy in ways that continue to meet our nation's material needs while also preserving a habitable planet. Even if a decarbonization package requires 5 percent of gross domestic product (GDP) per year over 10 years or more, expanded public spending can be safely financed through increased public debt. Even if tax increases are the desired approach to finance public spending on decarbonization, there are a number of taxes that would be socially beneficial to raise for their own sake, including taxes on very high incomes and wealth and a financial transactions-tax. Current macroeconomic conditions are such that spending on public investment should be considered a benefit, not a cost.



SAMPLE POLICIES TO DECARBONIZE THE ECONOMY

Pillar One: Put a Price on Carbon

Putting a price on carbon will change calculations about the mix of energy sources for electricity producers, when to rely on car-based transportation, what temperature to set the thermostat, how often to fly, which production methods to use, etc. Indeed, it is hard to imagine fundamentally changing these decisions *without* increasing the cost of these activities in proportion to their contribution to climate change. To reduce the impact of carbon pricing on lower-income consumers, though, any price on carbon must be refunded in equal, universal dividends, which will protect the purchasing power of most people including the vast majority of people in the bottom half of the income distribution.

Eliminate fossil fuel subsidies: The US should repeal all existing fossil fuel subsidies. We can start with the 16 provisions in the US federal tax code that currently subsidize fossil fuel producers by an estimated \$8.7 billion per year (Aldy 2013; OECD 2015). Federal and state subsidies, initially put in place to stimulate fossil fuel extraction and further develop domestic fossil fuel assets, are partly responsible for access to cheap fossil fuels. If the government were to stop paying these polluters through state and federal subsidies, it's estimated that almost half of all new US oil extraction would be unprofitable and left unpursued (Erickson et al. 2017). Additionally, fossil fuel subsidies represent an obstacle to renewable energy investment by artificially increasing the relative cost of renewable energy (High-Level Commission on Carbon Price 2017).

Implement a carbon cap-and-dividend program: Capping carbon emissions can force polluters to pay their fair share while avoiding the commoditization of the environment; employing a dividend program can help ensure that average Americans do not lose their purchasing power. While not a silver bullet, a carbon cap can ensure emissions targets are met by allowing the price of emissions permits to fluctuate. Though many equate a carbon cap with a carbon cap-and-trade policy, this need not be the case. We propose making permits time-limited and non-tradable. Revenue from the auctions would be distributed in the form of a universal dividend. Without a dividend, carbon pricing would disproportionately impact on lower-income Americans, who spend a large share of their income on transportation, heating and cooling, and other basic needs. With a dividends program, we can protect the incomes of the majority of Americans, including 84% of those in the bottom half of the income distribution.

Pillar Two: Implement Environmental Regulations

Regulating greenhouse gas-producing activities can provide a cost-effective method of reducing emissions. Regulations also have a proven track record of boosting innovation. For example, 62 percent of the growth in US non-hydro renewables since 2000 can be attributed to requirements set forth by renewable portfolio standards—regulations that require states' utilities to get a minimum percentage of their power from renewable energy (Barbose 2015).

Electrify the vehicle fleet: The US should implement policies to replace vehicles powered by internal combustion engines with modern electric vehicles (EVs). A key way to do this is by deploying a wide range of tools, including regulation. We should extend the existing EV tax credit and mandate that automobile companies increase the share of electric vehicles sold each year, with the requirement that 100 percent of new car and truck sales are EVs by 2030. This regulation would harness economies of scale to reduce the cost of purchasing, running, and maintaining an EV. Finally, to support such regulations, the federal government must also utilize our third pillar (explored below) and finance the development of fast-charging infrastructure to ensure the widespread adoption of these vehicles (Engel et al. 2018).

Require new buildings to be carbon neutral: We not only need to retrofit existing buildings (as discussed below), but we must also ensure that all new construction is carbon neutral. We propose that by 2025, regulations require



all new buildings to meet high energy efficiency standards, rely entirely on electric power, and be accessible by public and other forms of carbon-free transportation. The federal government should implement new standards immediately ramp them up fully by 2025. This can build on the existing model of national building codes, which allow for flexibility in building standards to account for variation across climate zones (DOE 2018). While energy efficient buildings have upfront costs, a recent report by the Rocky Mountain Institute found that the payback period for net-zero energy homes is fewer than 14 years in most of the 50 largest US cities, with some cities experiencing a far shorter payback period (Petersen et al. 2019).

Pillar Three: Deploy a Large-Scale Public Investment Program

Public investment is necessary to decarbonize the economy equitably and efficiently. A strong government role allows us to exploit economies of scale, solve coordination problems, and bring the economy to full capacity to transition as rapidly as possible. Public investment is necessary for things such as: retrofitting buildings, providing green transportation, building a green national grid, increasing research and development, and adapting to climate change that is already locked in. With profound impacts on people's access to housing, employment, and services, public investments must prioritize equity as a central goal.

Retrofit existing buildings: Retrofitting existing buildings could provide a win-win-win scenario, providing lower long-term operating costs, reducing GHG emissions, and creating millions of jobs across the US. Retrofitting represents low-hanging fruit in a world that must be rapidly decarbonized. While estimates vary, most suggest that the payoff period for such investments is reasonable, making these investments economically feasible. An initial program should electrify and upgrade all government buildings in use by 2030, prioritizing public schools. With an estimated 98,000 public schools across the US (NCES 2018), retrofitting could provide both local employment opportunities and much-needed savings for struggling local school districts by significantly reducing their utility bills.

Expand mass transit: Major investment in mass transit across the US is key to decarbonizing the economy. Policy should aim to electrify the existing transit system and develop new forms of public carbon-free mass transit to underserved areas. Free public transit could increase ridership and eliminate the cost burdens shouldered by low-income people. Researchers estimate that in conjunction with policies to adopt EVs, expansion of green transportation—including trip sharing, public transit, cycling, and walking—would both reduce transportation emissions by 80 percent and cost less than business as usual (Fulton et al. 2017). If investments were made in an equitable fashion, low-income communities in many of America's cities and suburbs would benefit disproportionately.

Build a high-capacity national grid: The decarbonization effort requires significant reform of the electricity sector, starting with the electrical grid. A national grid could improve reliability, resiliency, affordability, and energy efficiency, and as renewables' share of capacity grows steadily, the need for this new infrastructure is increasingly pressing (NREL 2017; Friedlander 1968; DOE 2002). As a groundbreaking study demonstrated, a national grid utilizing existing technologies could help reduce electricity emissions by 80 percent relative to 1990 levels without increasing the cost of electricity (MacDonald et al. 2016). A lack of coordination and financing have hindered action; the federal government can and should fill this gap.

Pay farmers to capture carbon: Climate change will greatly intensify the uncertainty and economic instability that farmers and farm workers already face, and it places the food supply at enormous risk. The federal government should pay farmers to adopt specific growing practices that foster soil carbon sequestration. Such a program, modeled by California's Healthy Soils Initiative, can support rural livelihoods and transition agriculture towards carbon neutrality. These methods not only pull carbon from the atmosphere but enhance farm productivity by building topsoil fertility; reducing the need for chemical pesticides, herbicides, and fertilizer; providing habitat for birds and beneficial insects; and curbing water runoff by improving soil drainage (CalCAN 2019).



Expand federal research and development spending: Cutting emissions by 80 to 95 percent is technologically feasible at this time, and increased investments in research and development (R&D) can ensure that the energy revolution is affordable, reliable, and safe for people and our collective environment. The US government should significantly expand investments in R&D to decarbonize the economy. We have a proven track record in marshalling resources to develop the needed technologies of the future (Mazzucato 2015), but currently the US woefully lags behind many other countries in R&D investments (World Bank 2019; Harvey et al. 2018). Increasing investment can not only address decarbonization, but also promote long-term growth and competitiveness.

Direct credit policy to green business: Given the inability or unwillingness of private financial markets to adequately finance green investment, the federal government should take steps to direct credit to private investment in decarbonization, including clean energy production, manufacturing, agriculture, and building retrofits. Credit policy has long been used in the US and other rich countries to direct bank lending and other forms of finance to areas deemed national priorities. During World War II, the federal government financed the great majority of new industrial capacity, even when the factories themselves were privately owned (Mason 2017a). The federal government should take a three-pronged approach to ensure that investment in decarbonization by private businesses and households is not limited by lack of access to credit. First, it should greatly expand loan guarantee programs for green investment. Second, it should establish a new public investment bank to lend directly to small businesses. Third, the Federal Reserve should support decarbonization by committing to keep interest rates low and by buying debt issued to finance decarbonization, either directly or from the public investment bank.

THE MACROECONOMIC CASE FOR DECARBONIZATION

Though the Green New Deal is most obviously motivated by the urgency of the problem of climate change, it is also a response to current macroeconomic conditions. In an economy that suffers from chronic demand shortfalls, and in which labor's share of income is steadily falling, there is a strong case for any program that involves increased public investment and encourages additional private investment. In this case, the real resources required by the Green New Deal should be seen not as a cost but as a benefit—one that can increase our nation's overall output, raise wages, and promote long-term innovation.

This section outlines the macroeconomic reasons why public spending is a pro-growth proposal. Further, we demonstrate that the US has substantial capacity to finance spending through increased public debt. Even if tax increases are the desired approach to finance public spending on decarbonization, there are a number of taxes that would be socially beneficial to raise for their own sake, including taxes on very high incomes and wealth and a financial-transactions tax. In short, it should be possible to finance a large decarbonization program that is sustained over a decade or more, without significant economic dislocation.

Our economy needs stimulus: The economy of the last several decades has been characterized by chronically weak aggregate demand—resulting in weak wage growth, a declining share of income accruing to labor, and weak business investment. Because the official unemployment measure is below 4 percent (3.8 percent as of March 2019), some might argue that there is no significant slack in the economy. However, the employment-to-population ratio remains below 2007 levels, and we see even now that workers who have long been on the sidelines are just being drawn back into the economy. Indeed, former IMF chief economist Olivier Blanchard (2018) suggested that “there is a strong case ... to allow US output to exceed potential for some time, so as to reintegrate some of the workers who left the labor force during the last ten years.”

Further, investment is well below what should be anticipated given high corporate profits. By requiring or encouraging businesses to reorganize production and distribution to be carbon neutral, it will call forth a great deal of new private and public investment and activate the currently underused capacity—real and financial—for capital formation in corporate America.



Finally, there is strong statistical evidence that our low levels of productivity increases are connected to weak demand (Girardi et al. 2018). When businesses are stretched for resources, firms must do more with less and have a strong incentive to improve their production techniques as much possible—through worker investments, technology investments, or process improvements.

All these indicators suggest benefits to increased demand.

We can increase debt spending: Today’s low interest rates make increased public borrowing much easier to sustain. If interest rates were higher than GDP growth rates, as in the 1980s and 1990s, maintaining a stable debt ratio would require “paying for” all public spending, in the sense that higher deficits in one year must be compensated by higher surpluses in a later year to keep the debt ratio on track. But when interest rates are lower than growth rates, as they are today, the debt ratio will stabilize on its own without any need for offsetting surpluses. If increased public spending boosts economic growth, it will further moderate any rise in the debt ratio.

For example, 10 years of additional borrowing equal to 4 percent of GDP brings the debt ratio to 118 percent, after which it gradually declines. These levels, while high, are not unprecedented. At the end of World War II, the US had a debt ratio of 120 percent. If we believe that the urgency of climate change is comparable to the urgency of World War II—a fundamental premise of the Green New Deal—then it is reasonable to contemplate a similar debt ratio.

We can spend revenue from socially beneficial taxes: A range of tax proposals would be beneficial to our economy and democracy regardless of their revenue-raising abilities. But luckily, they do raise revenue that can be used to finance decarbonization. Pigouvian taxes are taxes on activities that impose costs on the rest of society. Economists and policymakers are increasingly coming to regard taxes on financial transactions, concentrations of wealth, and top incomes as essential to curbing economically or politically destructive activities. Current proposals for a financial transaction tax, wealth tax, and increased top marginal income tax rate could raise 2.5 percent of GDP and finance a substantial part of the increased public spending proposed here.

CONCLUSION

The public sector must play a leading role in directing decarbonization. Though markets have many virtues, markets alone are not a suitable tool for the rapid, society-wide reorganization of production that this moment requires. Government programs should direct resources by using the tools available—carbon pricing, regulation, and investment—to initiate a rapid and comprehensive transformation of the economy. We as a society can and must decide, democratically but on the basis of professional expertise, which activities and sectors need to expand and which need to shrink or disappear. To do this, we must dismantle nearly 50 years of flawed economic assumptions and distorted decision-making that say that democratic politics and policymaking are incapable of building a healthy, sustainable, and equitable society.

The overarching argument of our report is that we can in fact meet the decarbonization goals that scientists tell us are non-negotiable—and we can do so in ways that support growth and equity. In order to reshape the American economy, we must shatter the commonplace assumptions that say government can’t solve big problems like climate change as well as the proliferation of unrewarding, insecure jobs. We can and must unleash public and private spending to mobilize the vast but underused productive capacities of our workers, businesses, and economy.

The Green New Deal has initiated a critical discussion on mass mobilization that is capable of redefining and improving the planet, the economy, and people’s lives. And it offers the American people a chance to reclaim our collective power and reshape our society into one that is more just and equitable—one that is more focused on human flourishing and less on private profit. We should not let this chance go to waste.



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