

BACKGROUNDER

No. 3444 | OCTOBER 16, 2019

THOMAS A. ROE INSTITUTE FOR ECONOMIC POLICY STUDIES

Pursuing Policies to Drive Economic Growth and Reduce Emissions

Nicolas D. Loris

KEY TAKEAWAYS

Economic growth and a clean environment are not mutually exclusive objectives. Rather, it is economic progress that drives positive environmental outcomes.

Extreme, top-down climate regulations significantly harm Americans both as taxpayers and energy consumers—all for negligible environmental benefit.

Pro-growth policies are pro-environment, too. Reforms should break down barriers to technological innovation, empower consumers, and improve access to markets.

Through investment in new technologies and through legislation, environmental trends have improved significantly in the United States. Pollutants known to cause harm to public health and the environment are declining.¹ As a country grows economically, it increases the financial ability of its citizens to care for the environment and reduce pollutants emitted from industrial growth. In fact, The Heritage Foundation's *Index of Economic Freedom* and Yale University's *Environmental Performance Index* show a highly positive correlation between a country's environmental performance and its economic freedom.²

In a competitive marketplace, companies respond to price signals, and entrepreneurs continually search for promising new opportunities. Market pressures to attract customers incentivize improvements in operations, investment, and resource use. These

This paper, in its entirety, can be found at <http://report.heritage.org/bg3444>

The Heritage Foundation | 214 Massachusetts Avenue, NE | Washington, DC 20002 | (202) 546-4400 | heritage.org

Nothing written here is to be construed as necessarily reflecting the views of The Heritage Foundation or as an attempt to aid or hinder the passage of any bill before Congress.

efficiency gains provide price-competitive products with smaller environmental footprints.

For example, beverage manufacturers have significantly reduced the amount of plastic to make and package water bottles; moreover, Coca-Cola's PlantBottle, which is made partially from plants, is a decade old—and market access continues to expand.³ Grocery stores and office buildings use energy-efficient lights and install motion-activated lights in less trafficked areas to cut costs. On a microeconomic level, individuals and businesses have a financial motivation to do more with less. On a larger scale, the cumulative effect of this incentive structure is that companies provide consumers with the goods and services they want—while using fewer resources and emitting fewer unwanted emissions.

However, profits alone do not drive investment decisions. Businesses could be responding to shareholder, social, or consumer pressures. Owners and investors may have their own non-monetary objectives, combating climate change being one of them. Indeed, investments in climate mitigation and adaptation continue to grow across many sectors of the economy. Entrepreneurs have found creative solutions that create new job opportunities and generate higher levels of prosperity while reducing emissions in the process.

Some compelling consumer-centric, industry-led examples include:

- The energy industry has undergone a massive transition over the past decade, largely because of market forces.⁴ In 2008, coal provided roughly 50 percent of the country's electricity generation. A decade later, coal's share of the pie was 27.4 percent.⁵ The increased penetration of natural gas through smart extraction technologies and declining costs of renewable power have fundamentally changed the energy landscape. In places like Pennsylvania, more residents are moving away from home heating oil to cheaper, cleaner natural gas. More than 50 percent of Pennsylvania households use natural gas for their home heating source, compared to just 17 percent using fuel oil.
- The U.S. natural gas industry's ascension as a leader in exports is paying dividends economically and environmentally across the globe. A new study from the Department of Energy's National Energy Technology Laboratory analyzed life cycle greenhouse gas emissions from U.S. liquefied natural gas (LNG) exports. In different scenarios of comparing U.S. LNG shipped to European and Asian markets, when compared to coal use or Russian piped gas, the life cycle emissions from U.S. LNG exports are lower.⁶

- In direct response to tough economic competition, the Nuclear Energy Institute organized nuclear power plants nationally to find operating efficiencies that reduced costs by 19 percent, resulting in \$1.6 billion in savings and keeping emissions-free electricity in the marketplace.⁷
- The U.S. has become the world's leading oil and natural gas producer, providing affordable, reliable power to families and businesses. At the same time, methane emissions from the natural gas industry have fallen from 1990–2017, according to the Environmental Protection Agency.⁸
- Electricity market choice at the wholesale and retail levels empowers households and firms. Businesses have committed to using more renewable power,⁹ driven in part by what the *Stanford Social Innovation Review* calls “strategic concern driven by market forces.”¹⁰ Where retail choice exists, households have the opportunity to choose from what generating source they receive their electricity. Additionally, increased demand response and real-time pricing enables consumers to reduce energy consumption, thus saving money and lowering emissions.
- Despite the regulatory morass and government subsidies that impede technological breakthroughs, financiers and entrepreneurs are progressing to advance alternative energy sources. Several advanced nuclear start-up technologies are emerging,¹¹ and developers of the technologies believe they can be cost-competitive with conventional sources of energy without subsidies.¹² Companies are making improvements in large-scale and small-scale battery storage.¹³ While utility-scale energy storage is currently cost prohibitive, research and investment in various battery technologies (e.g., lithium-ion and sodium-sulfur) have investors and entrepreneurs hopeful.¹⁴ Furthermore, natural gas combined-cycle generators continue to evolve, improving efficiency and consequently reducing sulfur dioxide, nitrous oxide, and carbon dioxide.¹⁵
- The demand for plant-based and lab-grown meat has increased over the past several years. Fast-food restaurants sold 228 million plant-based burgers so far this year, up 10 percent from the previous year.¹⁶ While the figures pale in comparison to beef consumption, demand is on the rise.

- The cement industry is collaborating with the Massachusetts Institute of Technology to explore how to improve efficiencies in cement processes, which will improve resiliency, reduce emissions, and save lives.¹⁷ New investments in cement, steel, plastic, and other building materials will make our houses and highways sturdier and our products more durable—with a smaller environmental footprint.¹⁸
- The cryptocurrency industry, labeled as a major climate problem because of its energy-intensive operations, is becoming part of the solution. Cryptocurrency miners are turning associated gas that would be flared into usable energy. Energy companies can install facilities and datacenters to mine cryptocurrency, which generates “over 15 times more revenue than the market price of the fuel, while limiting carbon footprint.”¹⁹
- Markets and investments are occurring for carbon-dioxide removal, and those markets are taking a number of different forms. Some companies and nonprofit organizations are protecting forests and planting more trees, while others are investing in direct air capture or topsoil-management programs for farmers and grazers.²⁰ Interestingly, voluntary markets are emerging for these carbon-removal processes.²¹ In the agricultural space, farmers and researchers have found that some crops pair well with the shade provided by solar panels; as a result, their growth increased their carbon-dioxide uptake.²²
- For several reasons, including economic opportunity and shareholder pressure, investors have taken initiatives to reduce greenhouse gas emissions. Led by Bill Gates, Breakthrough Energy Ventures is a more than \$1 billion investor-led fund “to make sure that everyone on the planet can enjoy a good standard of living, including basic electricity, healthy food, comfortable buildings, and convenient transportation, without contributing to climate change.”²³ According to 2017 report from the World Wildlife Fund, 48 percent of Fortune 500 companies have a climate change or clean energy target.²⁴ Amazon’s recent announcement to have 100,000 electric delivery vehicles on the road by 2030 is just one of many examples.²⁵

The aforementioned examples provide a mere snapshot of industry-led initiatives driving economic growth and reducing emissions. Some of those endeavors will have bigger economic and environmental impacts than

others. Nevertheless, it is clear for a variety of financial and non-financial motivations that the private sector has led, and continues to lead, in creating jobs, investing in innovative ideas, and fueling the economy—while reducing emissions. The American entrepreneurial spirit will meet consumers’ needs while taking environmental strides forward.

Federal Policies: Increased Costs and Unintended Consequences

Unlike “win-win” private-sector-led initiatives, federal climate policy that drives energy prices higher will exact significant harm on American households and on the economy broadly. Policies like the Green New Deal would cost Americans both as taxpayers and energy consumers. Notably, higher energy bills affect low-income households disproportionately because these homes spend a higher percentage of their budgets on energy costs. Americans with after-tax incomes of less than \$30,000 spend *23 percent* of their budgets on energy, compared to just 7 percent for those earning more than \$50,000.²⁶ According to the 2011 National Energy Assistance Survey, a poll of low-income families, 24 percent went without food for a day, and 37 percent decided to forgo medical and dental coverage, in order to pay higher energy bills. Nearly one in five had a family member who became sick due to the home being too cold.²⁷

Moreover, the direct energy and taxpayer costs are a small component of the overall cost Americans would suffer. Energy is a necessary input for nearly all goods and services we consume. Consequently, Americans would pay more for food, health care, education, clothes—and every other good or service that requires energy to make and transport. When it comes to businesses, large or small, they will either pass higher costs onto consumers or absorb them. Passing higher prices onto consumers suppresses demand. If businesses can manage to absorb the pricier energy, it means less money is available for investing in new technologies or hiring more people. Green New Deal-type policies act as a vice that squeezes both the production and consumption sides of the economy, resulting in lower output, lower household income, and higher rates of unemployment. Depending on the policy, the costs of stranded assets and lost shareholder value could easily end up in the trillions.

Americans have little appetite to pay such costs. A January 2019 poll conducted by the Energy Policy Institute at the University of Chicago and The Associated Press-NORC Center for Public Affairs Research found that 68 percent of Americans oppose paying an additional \$10 per month to

fight climate change.²⁸ Forty-three percent of respondents were not even willing to pay an additional dollar on their electricity bill to combat climate change.²⁹ Similarly, a more recent *Washington Post* and Kaiser Family Foundation poll found that 51 percent of respondents would not be willing to pay an additional \$2 per month on their residential electricity bill, and 71 percent of respondents would be unwilling to pay an additional \$10 per month.³⁰ Importantly, the polls fail to include how much abated warming Americans would receive from paying an additional \$1, \$20, or \$50 per month—which would be insignificant.

In addition to the economic harm caused by government intervention, these policies cause a number of unintended consequences. They include:

- **Cronyism, corporate welfare, and less innovation.** Americans distrust the federal government intervening in decisions better left for producers and consumers to make on their own.³¹ Federal and state subsidies and mandates enacted to slow global warming have concentrated *benefits* for politically preferred energy projects—and dispersed the *costs* to the rest of America. Energy cronyism benefits a select few and creates a vicious loop of politicians, lobbyists, and special interests. The economic pain cuts deeper than wasted taxpayer money because government interventions distort free enterprise, create government dependence, and allow Washington to direct the flow of private-sector investments. Perhaps most perverse is that energy cronyism obstructs the long-term success and viability of the technologies and energy sources they intend to promote. Instead of relying on a process that rewards competition, taxpayer subsidies prevent a company from truly understanding the price point at which the technology will be economically viable. When the government plays favorites, valuable resources get stuck in unproductive places.
- **Fewer resources available for environmental protection.** Economy-killing climate regulations would not only harm the livelihoods of the American people—but it would leave us in a worse position to improve the environment. By making us poorer, we would have fewer resources available to address climate and environmental challenges that exist today and in the future. Money diverted to higher energy bills could otherwise be spent on practical purposes that help households and businesses adapt to a changing climate. For instance, investing in more robust infrastructure can sensibly protect homes and storefronts against natural disasters, no matter the cause of the extreme weather event.

- **Shifting emissions to countries with less rigorous environmental and safety standards.** Despite the increased use of emissions-free energy sources and technologies, conventional resources such as coal, oil, and natural gas will likely dominate the energy and transportation landscape well into the future. Therefore, policies that restrict natural-resources production in the U.S. will not measurably affect energy consumption behavior, nor will it affect which type of energy consumers buy domestically or internationally. Higher energy prices from curtailed domestic supply could reduce consumption marginally, but it would also provide opportunities for increased natural resource production around the world—in places where environmental standards are not as rigorous as in the United States. Energy-intensive manufacturers that built their plants in America, citing affordable energy as a reason, may choose to build their next factories elsewhere. Decisions to curtail resource extraction in the U.S. would likely have the unintended environmental consequence of increasing global greenhouse gas emissions and criterion pollutants that adversely affect public health and the environment.

Climate Science: Certainties and Uncertainties

Climate change is real, and it is clear that man-made emissions are having an impact. The Intergovernmental Panel on Climate Change, 5th Assessment (IPCC) attributes at least half of the warming from 1951–2010 to human activities.¹⁶ Sea levels have been rising since the planet gradually warmed after the Little Ice Age. However, the IPCC *does not* conclude that the world has until 2030 to avoid catastrophic global warming.³² Distinguishing what climatologists know, what they do not know, and what they might know is necessary so that objective, transparent science can guide public policy.

For instance, uncertainty exists with regard to the accuracy of climate models (running too hot), how a doubling of carbon-dioxide emissions impacts global temperatures, and which trajectory greenhouse gas concentrations most accurately reflects the future. Furthermore, the Integrated Assessment Models used to justify the social cost of carbon dioxide and other greenhouse gas emissions are *not* credible for policymaking: The outputs change significantly with reasonable changes to the inputs. Subjecting the models to reasonable inputs for climate sensitivity and discount rates dramatically lowers the figure for the social cost of carbon dioxide. Furthermore, attempts to forecast economic damages centuries into the

future (as the integrated assessment models do) strain credibility when moving to the real world of policy implementation.

With regard to extreme weather events, the IPCC report and other mainstream science confirms the lack of trends for frequency and intensity of natural disasters. Tropical cyclone activity is not becoming more frequent. The IPCC notes in its most recent scientific assessment that “[n]o robust trends in annual numbers of tropical storms, hurricanes and major hurricanes counts have been identified over the past 100 years in the North Atlantic basin,” and that there are “no significant observed trends in global tropical cyclone frequency.” Further, “confidence in large scale changes in the intensity of extreme extratropical cyclones [such as “Superstorm” Sandy] since 1900 is low.”³³ A recently published article in the *American Meteorological Society* further shows that there has been no increase in trends for frequency or intensity of land-falling hurricanes in the continental U.S. since 1900.¹⁹

Warming could impact future tropical cyclone intensity and rainfall rates, but the National Oceanic and Atmospheric Administration clearly states:

In terms of detection and attribution, much less is known about hurricane/tropical cyclone activity changes, compared to global temperature. In the northwest Pacific basin, there is emerging evidence for a detectable poleward shift in the latitude of maximum intensity of tropical cyclones, with a tentative link to anthropogenic warming. In the Atlantic, it is premature to conclude with high confidence that human activities—and particularly greenhouse gas emissions that cause global warming—have already had a detectable impact on hurricane activity.³⁴

Moreover, the IPCC found evidence for increases, decreases, and “no trend at all” in flood activity or severity.²¹ As the U.S. National Climate Assessment summarized:

The IPCC Fifth Assessment Report did not attribute changes in flooding to anthropogenic influence nor report detectable changes in flooding magnitude, duration, or frequency. Trends in extreme high values of streamflow are mixed across the United States. Analysis of 200 U.S. stream gauges indicates areas of both increasing and decreasing flooding magnitude but does not provide robust evidence that these trends are attributable to human influences.³⁵

Trends in local events like hail and thunderstorms were also inconclusive.²³ Data for tornado activity in the U.S. shows tornadoes occur no more

frequently now than in the past and that the number of strong tornadoes (category F3 and above) has actually decreased.²⁴ As for droughts, the IPCC overstated previous conclusions about increasing trends and that “the compelling arguments both for and against a significant increase in the land area experiencing drought has hampered global assessment.”²⁵

Science should be a guiding principle for Congress; however, the politicization of science jeopardizes sound policymaking.

Policies to Drive the Economy and Environment Forward

Skepticism of costly, ineffective climate policies is not an excuse to do nothing. Americans want affordable, reliable energy *and* they want a clean environment. Policy and regulations significantly lag behind innovation, market trends, and consumer preferences. Institutional barriers stymie economic and environmental progress.

Policymakers should advance policies that will drive energy and environmental innovation. Breaking down barriers to competition, freeing up innovative pathways for new technologies, and freely trading energy technologies will meet America’s—and the world’s—energy needs while reducing emissions. Specifically, Congress and state policymakers should:

Open Access to America’s National Laboratories. The Department of Energy’s role, through its system of national laboratories and scientific research facilities, should be to conduct basic research to meet national objectives that the private sector would not undertake. Too often, advocates of government spending on technology-specific activities tout the federal government’s involvement in commercial successes, such as the Internet or the Global Positioning System. Yet, the initial intention for these government projects was not any private commercial need. Entrepreneurs saw a *commercial* opportunity in these defense technologies and created commercially viable products.

Congress should create a pathway that allows the private sector, using private funds, to tap into that research and commercialize it. Congress should also give lab directors more autonomy and allow federal lab employees (when appropriate and without violating conflict of interest rules) to push research into the marketplace if they see an opportunity. While these activities happen to some degree today, giving the labs more autonomy with proper oversight and transparency will encourage more innovation at the national labs.³⁶

Allow Department of Defense Energy Research to Expand Commercial Opportunities. The Department of Defense can also serve as a

good conduit for innovative breakthroughs on energy technologies, but spending on energy use should be mission-driven first. Certainly, alternative technologies provide advantages that enhance mission capabilities. Lighter, more efficient batteries lengthen the duration of a foot soldier's mission and reduce the weight of a soldier's backpack. Solar photovoltaics can also lighten a soldier's load and extend the travel distance of a drone. More fuel-efficient engines reduce the need for refueling. Developing micro grids and utilizing very small modular nuclear reactors can safely provide reliable power to isolated bases for long periods.³⁷

Fix the Regulatory and Policy Obstacles for Commercial Nuclear

Power. Facing a complex and burdensome regulatory system, commercial nuclear power in the U.S. has unnecessarily high construction costs. The regulatory system that licenses and permits nuclear reactors has failed to keep up with technological innovations and overregulates existing nuclear technologies. Instead of addressing underlying government-imposed problems, policymakers have focused on mitigating the cost of those policies through subsidies, leading to a predictable path of failure: While such an approach may spur some amount of commercial activity, it is limited only to what is subsidized.

Nuclear plants in America today continue to exhibit superior safety performance. Policy and regulations should reflect that track record. Congress should instill regulatory discipline at the Nuclear Regulatory Commission (NRC), encourage the Environmental Protection Agency to right-size radiation-exposure standards, review foreign ownership caps, reform the NRC's cost-recovery structure, and introduce market principles into spent-fuel management.³⁸

Fix the Regulatory and Policy Obstacles for Renewable Energy. Like most other energy projects, renewable power projects face excessive and duplicative regulations that increase costs and cause delays. Siting and permitting issues can be particularly problematic for wind and solar because the most advantageous locations for generations are in more remote areas. Therefore, additional transmission lines are necessary to take the power to densely populated places. Complex regulatory processes mean a company has to hire more lawyers and compliance officers to navigate complex, unclear regulatory schemes and fend off legal challenges to development.

Two of the biggest hindrances to energy project development are the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA). Congress should repeal NEPA and reform ESA laws by removing redundancies and transitioning authority to the states when applicable. Congress should also allow renewable energy companies to form Master

Limited Partnerships (MLPs). Under an MLP, businesses have the tax structure of a partnership or a limited liability company, but ownership equity trades publicly on a securities exchange. The combination of the partnership tax status and the liquidity of a publicly traded company make MLPs an attractive investment vehicle.

Yet another policy that senselessly drives up the cost of renewable energy is the Trump Administration’s stance on tariffs. Section 201 tariffs hurt the growth of the solar industry,³⁹ and steel and aluminum tariffs increase construction costs of wind turbines.⁴⁰ Most important, these tariffs hurt consumers.

End Tariffs, Promote Free Trade, and Expand Technological Innovation Internationally. In addition to solar tariffs, the Administration should pursue a zero-tariff policy and end tariffs for all energy sources. Tariffs adversely affect investment in new, cleaner energy technologies. The economic uncertainty created by the tariffs and the threat of tariffs and inaction in company exemption requests results in investment dollars sitting on the shelf. Companies do not know whether to move forward with projects or whether the costs of the tariffs mean that projects will become uneconomical. Opportunities for renewable natural gas and nuclear build-out and for new manufacturing factories may no longer be available.

In addition to removing the tariffs, policymakers should work with other countries to open up their energy markets. For instance, the shale revolution in the U.S. is largely responsible for providing families and businesses with cheap energy while also lowering emissions. Investment and innovation have the power to unlock an abundance of shale resources in developing countries like China. Currently, China has the world’s largest shale gas reserve.⁴¹

Commercial nuclear energy trade is another avenue that can meet the world’s energy needs while reducing emissions. For instance, Saudi Arabia is an important new market in the nuclear industry from both nonproliferation and commercial standpoints. Completing such an agreement would also allow the U.S. industry to compete in Saudi Arabia. Even where an American company fails to win a bid to build a reactor, U.S. companies can supply technical expertise and supply components for new nuclear power plants. Expanded commercial nuclear trade would incentivize both cooperation and competition—and help bring new nuclear technologies to the market.

Encourage Choice in Electricity Markets. Competitive electricity markets have served customers well. Some states have accomplished transition from monopolies to competition more successfully than others, and

additional free-market reforms are necessary to spur more entrepreneurial activity in electricity markets. However, when the underlying structure of competition is sound, the benefits to energy consumers are unambiguously positive.

Competition in electricity services allows greater customer choice through the power of the consumers' own dollars rather than through the disconnected votes of a small panel of public utility commissioners. Consumer choice comes not only in the form of resource choice (renewables, conventional fuels, or a mix) but also in financial choices (e.g., fixed rates, risk preferences, indexed rates, or short-term or long-term contracts). In the end, because electricity providers have to work for their customers, prices are competitive and quality improves.⁴² States should fix anti-competitive energy policies such as renewable energy mandates, which have wreaked havoc in the electricity sector by putting politics and special interests over customers.

Eliminate All Subsidies for All Forms of Energy. Favoritism in the energy sector takes many forms. Over the years, Congress has implemented numerous policies that use the political process to support the production or consumption of one good over another, including direct cash grants, special tax treatment, taxpayer-backed loans and loan guarantees, and socialized risk through insurance programs, mandates, and tariffs. Whatever shape the favoritism takes, the results are always the same: The government delivers benefits to a small, select group—and spreads the costs across families and consumers. Eliminating cronyism and corporate welfare has bipartisan support. If Congress removes all of the policies that pick winners and losers, the most innovative and cost-competitive fuels and technologies will flourish.

Expand Energy Infrastructure. A significant obstacle that prevents investment in cleaner energy sources or fuel switching is the lack of infrastructure to deliver the energy where it needs to go. Natural gas to the northeast region offers a price-competitive alternative to home heating oil; however, pipeline infrastructure is lacking. Out of the 5.7 million households who still rely on home heating oil, 85 percent reside in the northeast.⁴³ Last year, a tanker carrying Russian natural gas docked in Boston to supply Americans with energy despite the abundance of resources domestically.⁴⁴ Moreover, efficiently siting and permitting new transmission lines could expand the consumption of renewable power where, for example, there is a surplus of hydroelectric power in Canada.⁴⁵ Additional infrastructure would also allow energy-intensive manufacturing processes, like the cement industry, to fuel switch to save money and reduce emissions.⁴⁶

Streamlining the environmental review and permitting processes for new pipelines and grid investments would be a welcome step in the right direction. However, taxpayers should not subsidize those investments, and Congress should eliminate any federally imposed cost-socialization requirements through which regulatory agencies support expensive, uneconomic projects by spreading the costs to citizens who derive little, if any, benefit from those projects. Congress should be mindful of protecting private property rights and respect the state authority to control local and regional needs.

Make Immediate Expensing a Permanent Fixture of the Tax Code.

Immediate and full expensing for all new plant and equipment costs—for any industry or type of equipment—would allow newer equipment to come online faster, which would improve energy efficiency and overall economic efficiency. The current system of depreciation raises the cost of capital and discourages companies from hiring new workers and increasing wages for existing employees.

The Tax Cuts and Jobs Act allows for full expensing for short-lived capital investments until 2022. Policymakers should expand this to all investments and extend it permanently to encourage investment in capital that will drive growth and reduce industry's environmental footprint.

Repeal New Source Review (NSR). NSR is a vaguely written rule that disincentivizes efficiency improvements in power plants and other major industrial plants.⁴⁷ In areas that meet air-quality standards, plants must follow Prevention of Significant Deterioration (PSD) rules to demonstrate that the construction and operation of new projects and major modifications will not increase emissions above a specified threshold. There are several problems with NSR and PSD. What constitutes a significant modification is subjective under the rules. The amendment excludes routine maintenance, repair, and replacement, but what falls under the definition of “significant modification” remains murky—despite multiple administrative attempts to clarify the meaning. Plant upgrades can improve efficiency and reduce operational costs, thereby lowering electricity costs, increasing reliability, and providing environmental benefits. Nevertheless, NSR requirements for upgrades discourage these activities.

Repeal the Foreign Dredge Act and the Jones Act. Congress enacted the Merchant Marine Act (more colloquially known as the Jones Act) and the Foreign Dredge Act in the early 20th century to protect American maritime interests from foreign competition. These efforts to bolster the domestic shipbuilding industry have failed. By restricting competition, these laws not only increase costs to consumers but also increase congestion

on the roads and at America's ports. As North Carolina State University professor Thomas Grennes points out, "The long-term trend toward moving cargo traffic from water to land has increased congestion on highways, railroads, pipelines and ports."⁴⁸ Providing more pathways to transport U.S. products by repealing these protectionist statutes would save consumers money while reducing increased emissions due to artificially higher levels of congestion.

Conclusion

Americans want a clean, healthy environment; they want breathable air and drinkable water. Americans also need affordable, reliable power to light and heat homes, to power schools and hospitals, and to get to work every day. Economic growth and environmental protection should not be thought of as balancing priorities, but instead of pursuing policies that will move the country in the right direction on both. Policy reforms that open access to markets, eliminate cronyism, and remove burdensome regulatory obstacles for all energy sources and technologies will improve the economy and the environment.

Nicolas D. Loris is the Deputy Director of the Thomas A. Roe Institute for Economic Policy Studies and Herbert and Joyce Morgan Fellow in Energy and Environmental Policy, of the Institute for Economic Freedom, at The Heritage Foundation.

Endnotes

1. U.S. Environmental Protection Agency, "National Air Quality: Status and Trends of Key Air Pollutants," July 12, 2019, <https://www.epa.gov/air-trends> (accessed September 20, 2019).
2. For more information, see Nicolas D. Loris, "Chapter 5: Economic Freedom, Energy, and Development," in Terry Miller, ed., *2015 Index of Economic Freedom* (Washington, DC: The Heritage Foundation and Dow Jones & Company, Inc., 2015), <https://www.heritage.org/index/pdf/2015/book/chapter5.pdf>.
3. Jay Moye, "Coca-Cola Expands Access to PlantBottle IP," January 25, 2019, <https://www.coca-colacompany.com/stories/coca-cola-expands-access-to-plantbottle-ip-> (accessed September 23, 2019).
4. Lynn Doan, Brian Eckhouse, Christopher Cannon, and Hannah Recht, "What's Behind the World's Biggest Climate Victory? Capitalism," *Bloomberg*, September 15, 2019, <https://news.bloombergenvironment.com/environment-and-energy/whats-behind-the-worlds-biggest-climate-victory-capitalism> (accessed September 20, 2019).
5. U.S. Energy Information Administration, "Frequently Asked Questions: What Is U.S. Electricity Generation by Energy Source?" March 1, 2019, <https://www.eia.gov/tools/faqs/faq.php?id=427&t=3> (accessed September 20, 2019).
6. Selina Roman-White, Srijana Rai, James Littlefield, Gregory Cooney, and Timothy J. Skone, "Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States: 2019 Update," National Energy Technology Laboratory, September 12, 2019, <https://www.energy.gov/sites/prod/files/2019/09/f66/2019%20NETL%20LCA-GHG%20Report.pdf> (accessed September 20, 2019).
7. Nuclear Energy Institute, "Delivering the Nuclear Promise Forward Strategy," March 2018, <https://www.nei.org/resources/delivering-the-nuclear-promise/forward-strategy> (accessed September 20, 2019).
8. U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2017*, April 11, 2019, <https://www.epa.gov/sites/production/files/2019-04/documents/us-ghg-inventory-2019-main-text.pdf> (accessed September 20, 2019).
9. Camila Domonoske, "From Walmart to Google, Companies Teaming Up to Buy More Solar and Wind Power," National Public Radio, March 28, 2019, <https://www.npr.org/2019/03/28/707007584/companies-organize-to-make-it-easier-to-buy-renewable-energy> (accessed September 20, 2019).
10. Andrew J. Hoffman, "The Next Phase of Business Sustainability," *Stanford Social Innovation Review* (Spring 2018), https://ssir.org/articles/entry/the_next_phase_of_business_sustainability (accessed September 20, 2019).
11. Josh Freed, Samuel Brinton, Erin Burns, and Amber Robson, "Advanced Nuclear 101," December 1, 2015, <https://www.thirdway.org/report/advanced-nuclear-101> (accessed September 20, 2019).
12. Rod Adams, "As Extra-Large Nuclear Projects Struggle, Nimble Creators Devise New Approaches," *Forbes*, March 27, 2017, <https://www.forbes.com/sites/rodadams/2017/03/27/as-extra-large-nuclear-projects-struggle-nimble-creators-devise-new-approaches/#130c00bd2719> (accessed September 20, 2019).
13. U.S. Energy Information Administration, "U.S. Battery Storage Market Trends," May 2018, https://www.eia.gov/analysis/studies/electricity/batterystorage/pdf/battery_storage.pdf (accessed September 20, 2019).
14. Prachi Patel, "How Inexpensive Must Energy Storage Be for Utilities to Switch to 100 Percent Renewables?" *IEEE Spectrum*, September 15, 2019, <https://spectrum.ieee.org/energywise/energy/renewables/what-energy-storage-would-have-to-cost-for-a-renewable-grid> (accessed September 20, 2019).
15. U.S. Energy Information Administration, "Today in Energy: More New Natural Gas Combined-Cycle Power Plants Are Using Advanced Designs," June 19, 2019, <https://www.eia.gov/todayinenergy/detail.php?id=39912> (accessed September 20, 2019), and J. A. de Gouw, D. D. Parrish, G. J. Frost, and M. Trainer, "Reduced Emissions of CO₂, NO_x, and SO₂ from U.S. Power Plants Owing to Switch from Coal to Natural Gas with Combined Cycle Technology," *Earth's Future*, Vol. 2, No. 2 (February 21, 2014), pp. 75–82, <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2013EF000196> (accessed October 15, 2019).
16. Jeanette Settembre, "Good News for Beyond Meat? 95 Percent of People Who Order Vegan Burgers When Dining Out Aren't Even Vegetarians," *MarketWatch*, August 6, 2019, <https://www.marketwatch.com/story/more-meat-eaters-are-ordering-plant-based-burgers-when-dining-out-2019-07-17> (accessed September 20, 2019).
17. Jeremy Gregory, "Building a 100 Percent Clean Economy: Pathways to Net Zero Industrial Emissions," testimony before the Subcommittee on Environment and Climate Change, Committee on Energy and Commerce, U.S. House of Representatives, September 18, 2019, <https://docs.house.gov/meetings/IF/IF18/20190918/109943/HHRG-116-IF18-Wstate-GregoryJ-20190918.pdf> (accessed September 20, 2019), and Tiffany Vass, Araceli Fernandez-Pales, and Peter Levi, "Cement: Tracking Clean Energy Progress," International Energy Agency, May 24, 2019, <https://www.iea.org/tcep/industry/cement/> (accessed September 20, 2019).
18. Bill Gates, "Here's a Question You Should Ask About Every Climate Change Plan," August 27, 2019, https://www.gatesnotes.com/Energy/A-question-to-ask-about-every-climate-plan?WT.mc_id=2019091120000_Energy-Manufacturing_BG-LI&WT.tsrc=BGLI&linkId=72949981 (accessed September 20, 2019).
19. Lubomir Tashev, "Bitcoin Mining Helps Oil Companies Reduce Carbon Footprint," July 19, 2019, <https://news.bitcoin.com/bitcoin-helps-oil-companies-reduce-carbon-footprint/> (accessed September 20, 2019).

20. Adele Peters, "Billions of New Trees Could Help Stop Climate Change: Here's How We Get Them," *Fast Company*, July 9, 2019, <https://www.fastcompany.com/90373326/billions-of-new-trees-could-help-stop-climate-change-heres-how-we-get-them> (accessed September 20, 2019), and David W. Keith, Geoffrey Holmes, David St. Angelo, and Kenton Heidel, "A Process for Capturing CO₂ from the Atmosphere," *Joule* 2, August 15, 2018, pp. 1573–1594, [https://www.cell.com/joule/pdf/S2542-4351\(18\)30225-3.pdf](https://www.cell.com/joule/pdf/S2542-4351(18)30225-3.pdf) (accessed September 20, 2019).
21. "How Nori Works," August 22, 2019, <https://nori.com/resources/how-nori-works> (accessed September 20, 2019).
22. Scott K. Johnson, "Crops Under Solar Panels Can Be a Win-Win," *Ars Technica*, September 5, 2019, <https://arstechnica.com/science/2019/09/crops-under-solar-panels-can-be-a-win-win/?LinkId=73472517> (accessed September 20, 2019).
23. Breakthrough Energy Ventures, "Ventures," <http://www.b-t.energy/ventures/> (accessed September 20, 2019).
24. World Wildlife Federation, "Power Forward 3.0: How the Largest U.S. Companies Are Capturing Business Value While Addressing Climate Change," April 25, 2017, <https://www.worldwildlife.org/publications/power-forward-3-0-how-the-largest-us-companies-are-capturing-business-value-while-addressing-climate-change> (accessed September 20, 2019).
25. Patrick Thomas, "Amazon to Add 100,000 Electric Vehicles as Part of Climate Pledge," *Wall Street Journal*, September 19, 2019, <https://www.wsj.com/articles/amazon-to-add-100-000-electric-vehicles-as-part-of-climate-pledge-11568914649> (accessed September 20, 2019).
26. American Coalition for Clean Coal Electricity, "Energy Cost Impacts on American Families," June 2015, <http://www.americaspower.org/wp-content/uploads/2015/09/download-our-new-report.pdf> (accessed September 20, 2019).
27. National Energy Assistance Directors' Association, "2011 National Energy Assistance Survey Summary Report," October 2011, <http://neada.org/wp-content/uploads/2013/10/final-neada-2011-summary-report.pdf> (accessed September 20, 2019).
28. Energy Policy Institute at the University of Chicago, "Infographic: Where Americans Stand On Energy and Climate," January 22, 2019, <https://epic.uchicago.edu/news/infographic-where-americans-stand-on-energy-climate/> (accessed October 15, 2019).
29. Ibid.
30. Brady Dennis, Steven Mufson, and Scott Clement, "Americans Increasingly See Climate Change as a Crisis, Poll Shows," *Washington Post*, September 13, 2019, https://www.washingtonpost.com/climate-environment/americans-increasingly-see-climate-change-as-a-crisis-poll-shows/2019/09/12/74234db0-cd2a-11e9-87fa-8501a456c003_story.html (accessed September 20, 2019).
31. News release, "New Survey Finds Voters Skeptical of Government Action on Climate Change," American Energy Alliance, March 20, 2019, <https://www.americanenergyalliance.org/2019/03/new-survey-finds-voters-skeptical-of-government-action-on-climate-change/> (accessed September 20, 2019).
32. Patrick T. Brown, "Does the IPCC Say We Have Until 2030 to Avoid Catastrophic Global Warming?" January 4, 2019, <https://patricktbrown.org/2019/01/04/does-the-ipcc-say-we-have-until-2030-to-avoid-catastrophic-globalwarming/> (accessed April 6, 2019).
33. D. L. Hartmann et al., "Observations: Atmosphere and Surface," in *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, p. 216, http://www.climatechange2013.org/images/report/WGIAR5_Chapter02_FINAL.pdf (accessed April 7, 2019), and Philip J. Klotzbach et al., *Continental U.S. Hurricane Landfall Frequency and Associated Damage: Observations and Future Risks*, American Meteorological Society, July 2018, <https://science2017.globalchange.gov/chapter/8/> (accessed April 7, 2019).
34. National Oceanic and Atmospheric Administration, "Global Warming and Hurricanes: An Overview of Current Research Results," Geophysical Fluid Dynamics Laboratory, February 8, 2019, <https://www.gfdl.noaa.gov/globalwarming-and-hurricanes/> (accessed April 7, 2019), and Hartmann et al., "Observations: Atmosphere and Surface," p. 216.
35. M. F. Wehner, J. R. Arnold, T. Knutson, K. E. Kunkel, and A. N. LeGrande, "2017: Droughts, Floods, and Wildfires," in D. J. Wuebbles, D. W. Fahey, K. A. Hibbard, D. J. Dokken, B. C. Stewart, and T. K. Maycock, eds., *Climate Science Special Report: Fourth National Climate Assessment*, Vol. 1, <https://science2017.globalchange.gov/chapter/8/> (accessed October 15, 2019).
36. Nicolas D. Loris, "INNOVATES Act Creates a More Effective National Lab System," Heritage Foundation Issue Brief No. 4141, January 24, 2014, http://thf_media.s3.amazonaws.com/2014/pdf/IB4141.pdf.
37. Dorothy Robyn and Jeffrey Marqusee, *The Clean Energy Dividend: Military Investment in Energy Technology and What It Means for Civilian Energy Innovation*, Information Technology and Innovation Foundation, March 2018, http://www2.itif.org/2019-clean-energy-dividend.pdf?_ga=2.133613257.674204463.1551967655-1212308.1551734962 (accessed September 20, 2019).
38. Katie Tubb, Nicolas D. Loris, and Rachel Zissimos, "Taking the Long View: How to Empower the Coal and Nuclear Industries to Compete and Innovate," Heritage Foundation Backgrounder No. 3341, September 5, 2018, <https://www.heritage.org/energy-economics/report/taking-the-long-view-how-empower-the-coal-and-nuclear-industries-compete>.
39. Solar Energy Industries Association, "Section 201 Solar Tariffs," <https://www.seia.org/research-resources/section-201-solar-tariffs> (accessed September 20, 2019).
40. American Wind Energy Association, "U.S. China Tariffs Hurt Wind Industry Jobs in Your State," https://www.awea.org/Awea/media/About-AWEA/US-China-Tariffs-Wind_10-12-2018.pdf (accessed September 20, 2019).
41. "China Sits on the World's Biggest Shale Gas Prize. Pumping It Out Is the Hard Part," *Bloomberg News*, July 19, 2018, <https://www.bloomberg.com/news/features/2018-07-19/petrochina-sinopec-are-chasing-an-elusive-shale-boom> (accessed September 20, 2019).

42. For example, Texas has been a model for how competition benefits consumers. See Chuck DeVore, "California Government Mandates Send Electricity Prices Skyrocketing, But Texas Free Market Policies Keep Prices Low," Fox News, November 16, 2017, <http://www.foxnews.com/opinion/2017/11/16/california-government-mandates-send-electricity-prices-skyrocketing-but-texas-free-market-policies-keeps-prices-low.html> (accessed September 20, 2019).
43. U.S. Energy Information Administration, "Heating Oil Explained: Use of Heating Oil," February 2, 2019, <https://www.eia.gov/energyexplained/heating-oil/use-of-heating-oil.php> (accessed September 20, 2019).
44. Steven Mufson, "Tanker Carrying Liquefied Natural Gas from Russia's Arctic Arrives in Boston," *Washington Post*, January 18, 2018, https://www.washingtonpost.com/business/economy/tanker-carrying-liquefied-natural-gas-from-russias-arctic-arrives-in-boston/2018/01/28/08d3894c-0497-11e8-8777-2a059f168dd2_story.html (accessed September 20, 2019).
45. David Ferris, "Canada Has Too Much Clean Electricity. Anybody Want It?" E&E News, September 21, 2017, <https://www.eenews.net/stories/1060061255> (accessed September 20, 2019).
46. Jeremy Gregory, "Building a 100 Percent Clean Economy."
47. Ibid.
48. Thomas Grennes, "By Land or by Sea: Does the Jones Act Cause Land-Based Transport Congestion?" Cato Institute, November 15, 2018, <https://www.cato.org/publications/cato-online-forum/land-or-sea-does-jones-act-cause-land-based-transport-congestion> (accessed September 20, 2019).