



The Promise Ahead

Manufacturers Taking Action on Climate

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OUR HOME, OUR PROMISE

The time for bold climate action is now.

Manufacturers are committed to acting responsibly in helping to maintain a clean and prosperous environment. We owe this to the people and communities we serve, to our customers across the globe and to the millions of men and women who make things in America.

We have made great strides as a nation to reduce the emissions that cause climate change. However, we have done so in spite of the policies set by Washington, not because of them. In our nation's capital, we have spent far too long apportioning blame over climate change and far too little time working on solutions.

We're calling for action. And with this plan, we are providing a road map.

Why? Because manufacturing holds the key to solving this global challenge. Think about the technologies that will get us there. Clean energy. Carbon capture. Batteries. Microgrids. Efficiency. Advanced vehicles. Manufacturers make these products and technologies and will continue to invent new ones.

Confronting climate change will not be easy. But it is neither the first nor the last challenge that manufacturing ingenuity will solve. And if we work together—if we rise above politics and partisanship and focus on solving problems—we can make our vision of a brighter tomorrow into reality.

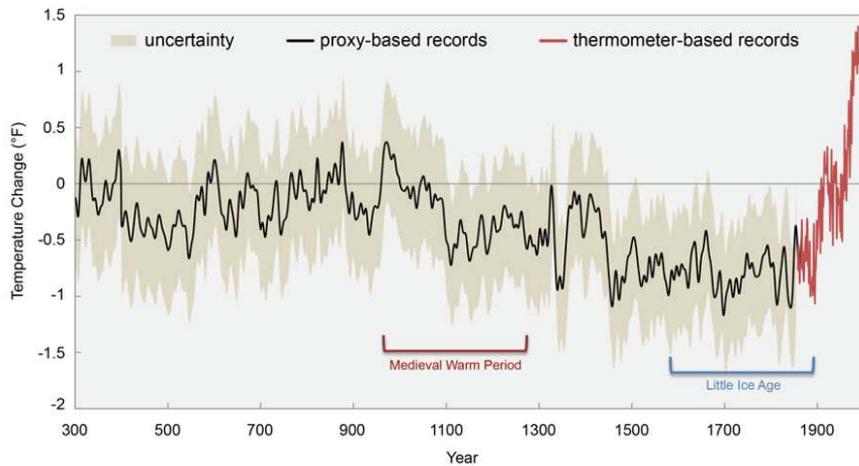
THE SCOPE AND MAGNITUDE OF THE CLIMATE CHALLENGE

The Earth is warming, and human activities are causing it.¹ That is the conclusion of the most recent National Climate Assessment by the U.S. Global Change Research Program, a consortium of 13 federal agencies that coordinates research on the forces that shape the global environment.

The USGCRP explains the situation:

- This assessment concludes, based on extensive evidence, that it is extremely likely that **human activities, especially emissions of greenhouse gases, are the dominant cause of the observed warming since the mid-20th century.** For the warming over the past century, there is no convincing alternative explanation supported by the extent of the observational evidence.
- In addition to warming, many other aspects of global climate are changing, primarily in response to human activities. **Thousands of studies conducted by researchers around the world have documented changes in surface, atmospheric and oceanic temperatures; melting glaciers; diminishing snow cover; shrinking sea ice; rising sea levels; ocean acidification; and increasing atmospheric water vapor.**²

1,700 Years of Global Temperature Change from Proxy Data



Our rapidly changing climate poses significant threats to human health, natural resources, biodiversity, infrastructure, food supply, economic growth and many other necessities. These are not merely future risks; the impacts of climate change are already being felt now in communities across the country and around the world.

“We at Johnson Controls are committed to Healthy People, Healthy Places and a Healthy Planet. We firmly believe that climate change is one of the most critical issues of our time. Recently, we submitted our carbon-reduction targets to the Science-Based Targets Initiative. These targets align with the more ambitious aim to limit global temperature rise to 1.5 degrees Celsius. We believe this target puts us on a path to achieve net-zero carbon emissions well before 2050.”

– Katie McGinty, VP and Chief Sustainability, Government and Regulatory Affairs Officer, Johnson Controls

“Enviva views climate change as one of the greatest challenges facing the world today. The company agrees with the scientific community that the world must achieve ‘net-zero’ carbon emissions by 2050. One way to do that is to leverage and recycle existing energy infrastructure using sustainably sourced wood-based biomass. When sourced responsibly, wood-based biomass is a renewable, reliable, dispatchable, cost-effective energy source and a complement to wind and solar. At Enviva, we are working every day to solve the climate crisis. We are a part of a solution that supports U.S. jobs, eliminates global greenhouse gas emissions and promotes a near-term solution to achieving ‘net-zero’ carbon emissions by 2050.”

– John Keppler, Chairman and CEO, Enviva

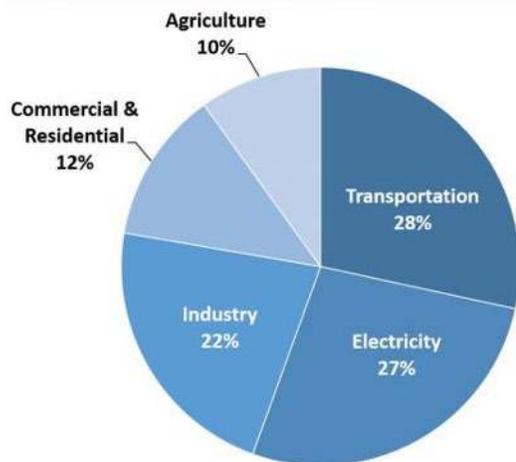
“The Kraft Heinz Company sees sustainability as a strategic goal. We set renewable energy consumption goals through 2025, focusing on reducing water use, waste and energy-intensive operations at our manufacturing sites. We prioritize continued progress and transparency consistent with our values, which call for us to always do the right thing.”

– Rashida La Lande, Global General Counsel and Head of ESG and Government Affairs, The Kraft Heinz Company

The United States emitted 6,677 million metric tons of GHGs (measured in terms of CO2 equivalent) in 2018. Of these emissions, 81% were carbon dioxide (CO2); 10% were methane (CH4); 7% were nitrous oxide (N2O); and 3% were fluorinated gases, specifically hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF3) and sulfur hexafluoride (SF6).

The sources of GHG emissions are diverse. Transportation is responsible for 28.2% of U.S. GHG emissions; electricity production 26.9%; industry 22.0%; commercial and residential sectors 12.3%; and agriculture 9.9%.³ While the forestry and land use sector emitted 11.6% of total GHG emissions, the sector also acts as a carbon sink, offsetting emissions by absorbing more CO2 from the atmosphere than it produces.⁴

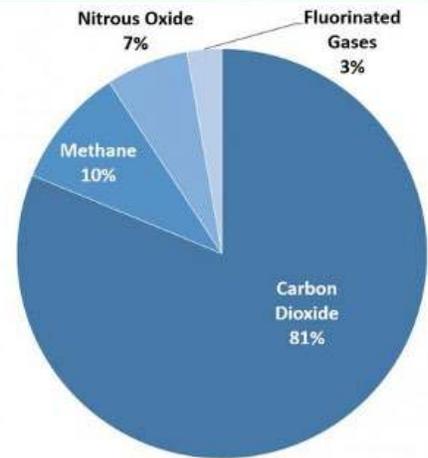
Sources of Greenhouse Gas Emissions in 2018



Source: EPA Inventory of Greenhouse Gas Emissions and Sinks

steel, which is different from paper, which is different from plastic. And many products use a mix of all. These differences make manufacturing strong, but they can create challenges for policymaking.

Overview of Greenhouse Gas Emissions in 2018



Note: Due to rounding, the total exceeds 100%.

Source: EPA Inventory of Greenhouse Gas Emissions and Sinks

A global consensus has emerged that we must restrict global temperature rise to 2 degrees Celsius above preindustrial levels and strive to limit the rise to 1.5 degrees. Either scenario will require massive reductions in GHG emissions over the next 30 years and would likely require net emissions to reach zero in the coming decades.⁵ Recent proposals in Washington have sought to limit domestic GHG emissions to anywhere from 80% below 2005 levels to net-zero emissions by 2050.

The manufacturing sector has taken strong steps to combat climate change in recent years. Over the past decade, manufacturers in America have reduced the carbon footprint of our products by 21% while increasing our value to the economy by 18%. The manufacturing sector is difficult to address from a policy perspective because it is so diverse. Manufacturing cement is different from making

“At Carrier, sustainability is not a side activity. Given that buildings are responsible for 40% of all energy consumption—and HVAC systems account for 40% of that—we recognize that we must be part of the solution. We do that by introducing new products with a focus on efficiency. The same holds true for the cold chain. It is estimated that 25% of vaccines are never administered, and one-third of the world’s food goes to waste—while one out of every nine people go to bed hungry—so making a difference in cold chain solutions can help protect the environment and help save lives. Sustainability is not just the right thing to do for our planet and future generations—it’s also good business.”

– Dave Gitlin, President and CEO, Carrier Global Corporation

“We believe we must act quickly to mitigate the potentially catastrophic effects of the climate emergency threatening our global community today. That’s why we are committed to doing our part to limit the increase of the world’s temperature to 1.5°C—an effort that begins with our pledge to achieve aggressive, science-based targets and become carbon neutral in our operations by 2030.”

– Harold Jones, Executive Vice President, EBS & Sustainability, Eaton

“Climate protection is firmly embedded in our purpose and is a cornerstone for our strategy. We will grow our production volumes significantly without adding further CO2 emissions until 2030, and by doing so, continue to decouple our greenhouse gas emissions from organic growth. Our global Carbon Management program helps us fulfill this commitment. It involves continued operational excellence measures to improve energy and process efficiency, using a greater proportion of renewable energies in our global power supply, and an R&D program to develop breakthrough technologies for those basic chemicals, which are most CO2 intensive. Currently, we sell 14,000 Accelerator solutions along the value chain that serve to differentiate our customers, have a reduced environmental impact, contribute to improved quality of life and enable us to grow in future markets. We are also the world’s first chemical company offering customers product-level carbon footprint data for our full portfolio of over 40,000 products.”

– Tobias Dratt, President, Region North America and CFO/COO, BASF Corporation

“At Genentech, we apply the same science-based approach to environmental sustainability that we do to creating medicines for people with serious diseases. We have succeeded as an industry leader in sustainability through aggressive goal setting and incorporating sustainable practices in all areas of our business, from manufacturing operations to our employee cafeterias. In 2019, 97% of the grid electricity we used at our South San Francisco site was CO2 free, which we accomplished by leveraging a direct access contract that sourced wind and hydropower. In 2019, we reduced our water consumption by 7% compared to the prior year, for a total savings of 18.5 million gallons of water at our South San Francisco site. Looking to the future, I’m excited about establishing even greater sustainability goals for the next decade.”

– Carla Boragno, Senior Vice President and Global Head of Engineering and Facilities, Pharma Technical Operations, Genentech

MANUFACTURERS’ PLAN FOR ACTION

A successful climate policy must have two core components: (1) an international, rules-based system that is consistently applied to bind all emitters and ensure a level playing field and (2) a unified domestic framework that applies to all emitters and harmonizes GHG regulation. While those two elements are being negotiated, policymakers should also move forward with measures that will reduce emissions immediately and accelerate the U.S. response to climate change.

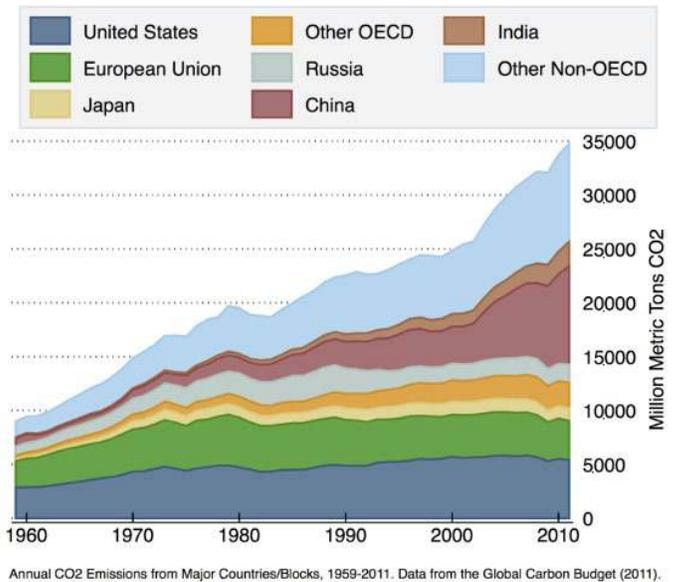
STEP ONE:

Negotiate and ratify a fair, binding international treaty, while continuing to drive reductions domestically.

The NAM recommends commencing negotiations in earnest to achieve a binding global climate treaty.

The United States must lead the global response to climate change, but to be effective, the response must be truly global. In our global economy, the one constant is change. For years, the United States led the world in emitting GHGs; China has since overtaken us, producing 28% of global emissions, and now the United States only represents 15% of global emissions.⁶ India could also surpass the United States in emissions over the coming decades as it grows and industrializes. The original 1992 U.N. Framework Convention on Climate Change did not anticipate this shift; the UNFCCC requires significantly more commitments from countries considered as “developed” in 1992 than countries that were not, like China and India. Much has changed since 1992, yet the UNFCCC’s arbitrary lines remain in place—an obstacle to increased global ambition.

Global CO2 Emissions



“In the largest venture of its kind in the United States, Dominion and Smithfield are jointly investing \$500 million over the next 10 years to develop renewable natural gas projects across the country. Once the partnership’s planned projects are complete, they will reduce annual greenhouse gas emissions from U.S. hog farms by 2.5 million metric tons, the same amount as taking 500,000 cars off the road or planting 40 million new trees each year. With the Utah project in operation and additional projects under development in North Carolina and Virginia, the partnership plans to produce enough renewable natural gas over the next 10 years to heat more than 70,000 homes and businesses.”

– **Dominion and Smithfield partnership announcement⁷**

“Being a responsible corporate citizen—operating and doing business in a sustainable and socially responsible manner—runs deep at Bendix Commercial Vehicle Systems. We have learned from experience that it’s possible to combine our sustainability efforts with strategic business initiatives to make improvements that help protect the environment as well as the bottom line. Aligning our energy-efficiency and CO2 reduction efforts to the science-based targets of the 2016 Paris Agreement, and driving zero waste initiatives that align with the United Nations’ ambitious Sustainable Development Goal for Responsible Production and Consumption, we are committed to leaving a better planet for future generations.”

– **Michael Hawthorne, President and CEO, Bendix Commercial Vehicle Systems, LLC**

“It’s clear that electromobility will be a part of the trucking industry’s future, and Mack Trucks is paving the way toward widespread acceptance of zero-emissions electric trucks with our LR Electric refuse model. With a rich history of powertrain innovation, Mack is well-positioned to offer integrated, fully electric solutions that not only meet the needs of our customers, but also help meet societal demands for more sustainable transportation solutions.”

– **Martin Weissburg, Chairman, Volvo Group North America, President, Mack Trucks**

The Paris Climate Agreement sought to solve this global inequity through the concept of nationally determined contributions, through which large emitters like China and India could commit to doing more than the UNFCCC had required originally. While the Paris Climate Agreement was far from perfect, the fact that it was international in scope was a step in the right direction. Thus far, all 197 countries and the European Union have signed it, and 188 countries and the European Union have ratified or acceded to it. Experts agree that the progress the historic agreement represents is still not enough to stop climate change. President Trump stated an intent to renegotiate better terms for the United States, but no such renegotiation occurred during his administration. Despite this withdrawal from the global stage, the United States could still meet its Paris pledge, given projections for 2020 are 20-21% below 2005 levels.⁸ But these reductions are largely due to private-sector action in the absence of a unified climate policy.

“Getting to a net-zero economy is among the greatest challenges the world has ever faced, and the global business community has a responsibility and an opportunity to lead in addressing the issue. At Dow, our sustainability journey began more than 30 years ago, and it continues today. We are on our third generation of 10-year sustainability goals, aligned to the United Nations’ Sustainable Development Goals, and in 2020 announced our intention to achieve carbon neutrality by 2050, aligned to the Paris Agreement. A sustainable future is attainable, but only if we continue to tackle this issue head-on, hold ourselves accountable and work together to enable new science- and technology-based solutions that deliver a low-carbon future.”

– Jim Fitterling, Chairman and CEO, Dow

“Unprecedented challenges, like the climate crisis, require extraordinary leadership. At Trane Technologies, we are uniquely positioned to tackle our world’s biggest environmental challenges. Our 2030 Sustainability Commitments include a pledge to achieve carbon-neutral operations, and our bold and far-reaching Gigaton Challenge calls for a reduction of 1 billion metric tons, or 1 gigaton, in our customers’ carbon footprints.

“With 15% of the world’s emissions caused by heating, cooling and ventilation, and another 10% by global food loss, Trane Technologies is developing new, better ways to achieve indoor environmental quality and move refrigerated food, medicines and vaccines to the people who need them. The power to change our industry, and our world, begins with us. One gigaton at a time, we will challenge what’s possible to create a stronger, healthier and more sustainable world.”

– Michael W. Lamach, Chairman and CEO, Trane Technologies

“AECOM acknowledges the inextricable link between climate change, ecological integrity and social equity. The company achieved its previous 2020 greenhouse gas emissions reduction targets ahead of schedule and has since set new science-based targets that align with the Paris Agreement’s goals to limit the worst effects of climate change. AECOM is now committed to a 20% reduction in operational emissions from fleet vehicles and office energy and a 10% reduction in supply chain emissions by 2025 compared with its 2018 baseline. Further, the company is evaluating its ability to achieve carbon-neutral operations by 2050 or earlier, in line with the Paris Agreement.

“We’ve looked at how we can intensify the focus of our business to provide holistic sustainable solutions that solve our clients’ most complex climate challenges while also helping them achieve their sustainability aspirations. Whether that’s establishing climate commitments, implementing GHG reduction and net zero strategies or helping clients become more resilient by assessing climate change vulnerabilities, we are helping them limit and prepare for the impacts of climate change.”

– Frank Sweet, Executive Vice President, Environment Global Business Line, AECOM Corporation

The NAM recommends commencing negotiations in earnest to improve on the Paris Climate Agreement and achieve a binding global climate treaty. There are several ways to accomplish this goal. For instance, Article 14 of the Paris Climate Agreement provides for a “Global Stocktake” that assesses collective progress toward achieving the agreement’s goals. The first Global Stocktake occurs in 2023 and subsequent Global Stocktakes occur every five years thereafter. The United States could use the 2023 Global Stocktake as an opportunity to negotiate better terms. The United States could also seek to renegotiate the rules and responsibilities of major emitters in the UNFCCC itself. This would be a monumental task, but it provides a path toward solving the inequities that have plagued international climate negotiations for decades.

Manufacturers believe that a comprehensive climate treaty must be the foundation of the U.S. response to climate change to prevent carbon leakage and solve the underlying problem. Carbon leakage occurs when industries move from a jurisdiction with carbon controls to one without similar controls, effectively “offshoring” the emissions (and the jobs). So the goal of such an agreement must be to address the climate threat in a manner that prevents carbon leakage by ensuring that no country gains a competitive advantage from failing to take meaningful, equitable action to reduce carbon emissions.

An agreement must be fair, effective, transparent and protect intellectual property rights. It should eliminate all possible tariff and nontariff barriers to the purchase of environmental goods and technologies.

“Hitachi has pledged to become carbon-neutral in our own production by 2030, and sustainability is at the core of our digital industrial transformation solutions. Leveraging artificial intelligence, machine learning and advanced data management through digital technology, we are helping our business partners connect their entire manufacturing value chains to improve asset efficiency, utilize predictive maintenance and optimize energy and water consumption. As drivers of innovation, we’re charting a new course toward a sustainable future powered by digital manufacturing.”

– Toshiaki Higashihara, President and CEO, Hitachi, Ltd.

“Inspired by the United Nations Sustainable Development Goals, Solvay’s new 2030 sustainability program, Solvay One Planet, directly aligns with the company’s purpose of bonding people, ideas and elements to reinvent progress. Solvay pledges to reallocate investments to promote sustainability within its portfolio, operations and workplace, while leveraging partnerships to accelerate sustainable solutions and the circular economy.

“With Solvay One Planet, we are setting bolder objectives to solve key environmental and societal challenges through science and innovation. Beyond climate change, we will tackle resource scarcity and promote a better life. Together with our customers, we will create sustainable shared value for all.”

– Ilham Kadri, Chairman and CEO, Solvay

Elements of a Climate Treaty

✔ Fair

All countries must agree to reductions. This does not mean that every country will make the same reductions in absolute terms or on a per-capita basis. It does mean that reductions must be equitable. One country or a group of countries cannot shoulder an unfair share of the reduction burden. Likewise, global GHG reductions should not create economic or geopolitical advantages by letting some countries delay action or allowing developed countries to be treated as “developing.”

✔ On Target

The purpose of a climate treaty is to keep post-industrial warming of the planet to “well below 2 degrees, and approaching 1.5 degrees.” Combined global GHG reductions must be large enough to achieve this goal. Mere “best efforts” will not achieve the goal and pose the danger of creating a moral hazard. Given the severity of the threat, an international treaty must require global reductions large enough and quickly enough to keep warming below 2 degrees.

✔ Enforceable

A climate treaty must have strong mechanisms for ensuring that each country meets its emission-reduction responsibilities. History has made clear that shaming alone is inadequate to compel countries to honor international laws and treaties. A predictable and swift system for ensuring no country can cheat is critical for manufacturers in the United States to maintain global competitiveness.

✔ Transparent

For enforcement mechanisms to work, monitoring and reporting systems must be transparent. Third-party monitoring and access to established systems for ensuring high-quality data reporting are critical. Likewise, a climate treaty should have provisions for dealing fairly and quickly with petitions for correction of such information. An unbiased peer review of scientific and technical information should be an integral part. Pre-dissemination review of reporting is just as critical as robust enforcement mechanisms.

✔ Pro Trade

Transparent rules of fair competition and the protection of private property, including intellectual property, contracts and related commercial activities should be foundational to any climate treaty. Fairly conducted trade provides opportunity for growth and expansion of manufacturing in America, increases the range of goods and services available to communities, enhances market-based production globally and contributes to closer understanding and cooperation among nations. Eliminating tariff and nontariff barriers would substantially reduce the cost of investments to improve the global environment, increase the use of environmental goods and services and provide an incentive for more rapid development of these technologies.

✔ Innovative

It is vital that manufacturers’ intellectual property rights be fully protected. Any requirement for nonvoluntary transfers of climate technologies ultimately undermines ambition toward achieving environmental goals. Compulsory transfers of technology would seriously threaten both the future competitive position of the United States and the development of new technologies to achieve environmental objectives, while also putting at risk manufacturing jobs in environmental technologies in the United States.

STEP TWO:

With an equitable international agreement as a backdrop, the United States should enact a single, unified federal policy to manage GHG emissions.

The NAM recommends Congress enact a single unified climate policy that meets science-based targets, ensures a level playing field without carbon leakage and preserves consumer choice and manufacturing competitiveness.

One Unified Policy

Currently, manufacturers face a patchwork of federal, state and local laws and regulations to address climate change—policies such as the EPA’s power plant GHG standards, the Regional Greenhouse Gas Initiative in the Northeastern United States, California’s Global Warming Solutions Act, Oregon’s Clean Fuels Program, federal and state automobile regulations and the Climate Mayors’ pledge by individual cities to meet the U.S. GHG reduction targets from the Paris Climate Agreement.

There are also a host of related laws and actions that further complicate the climate policy landscape. For instance, 29 states plus the District of Columbia have a renewable electricity standard, while 17 states plus the District of Columbia have energy-efficient appliance standards that differ from federal guidelines. Activists have waged a variety of successful campaigns to shut down power plants and stop new pipelines and transmission lines. Climate litigation has increased in recent years, with states, cities and private citizens suing the government, manufacturers and even each other to force federal action, apportion blame and secure damages.

“The VELUX Group initiated and then developed together with The World Wide Fund for Nature a unique concept called Lifetime Carbon Neutral, which means we’re taking responsibility for our past and our future carbon emissions by 2041, our 100-year anniversary. To capture our historical carbon footprint, we’re working with WWF to protect and restore forests and the biodiversity within them—one of the most efficient ways to capture carbon. We will reduce our future carbon footprint by accelerating investments in energy efficiency at our production sites, shifting to renewable energy, purchasing renewable energy, further reducing waste at our production facilities and reducing by 50% the carbon footprint of our value chain. We’re doing this because we believe it’s the right thing to do—it’s good for business, and it’s good for the planet.”

– Charles J. Rimsky PE President, VELUX Greenwood LLC

“U.S. households produce millions of tons of waste per year, and Air Liquide is leading the way in putting this byproduct to good use. Biogas, composed primarily of methane and carbon dioxide, is a natural byproduct of the decomposition of household waste. By utilizing its biogas technology portfolio, Air Liquide can transform one man’s trash into an environmentally friendly treasure: renewable natural gas. Biomethane is a green energy source that can be used as a fuel for clean mobility, a feedstock for industry or injected into domestic grids for power and heating, but also to produce carbon-free hydrogen. Air Liquide continues to seek new opportunities to expand the market for renewable natural gas and to contribute to the development of a low-carbon society.”

– Michael Graff, Chairman and CEO, American Air Liquide Holdings, Inc., Executive Vice President, Air Liquide Group

For manufacturers, the resulting policy landscape is difficult to navigate. Manufacturers need predictability, consistency and certainty, so that we can make smart investments in communities without having to worry that the rules of the road will change a few years later. And international competition is only making this all the more critical.

Manufacturers will support a strong federal policy that meets science-based targets and displaces the existing climate patchwork. Congress should enact a unified national climate policy that harmonizes federal, state, regional and local policies and displaces current and future climate liability lawsuits.

Ensuring a Level Playing Field and Avoiding Carbon Leakage

The manufacturing sector contributed \$2.36 trillion to the U.S. economy in the first quarter of 2019, up from \$1.67 trillion just 10 years ago.⁹ Manufacturers have been the backbone of the nation's economy, creating jobs with an unparalleled economic impact. For every \$1.00 spent in manufacturing, another \$2.74 is added to the economy—the highest multiplier effect of any economic sector.

A climate policy that results in deep cuts to GHG emissions will almost certainly have a cost, and manufacturers cannot be expected to bear a disproportionate share of those costs. Lawmakers must ensure a level playing field, especially for energy-intensive manufacturers.

- Any solution must be economy-wide and apply to all emitters. Manufacturers will continue to do our part to reduce emissions, but we are only responsible for 22% of U.S. emissions and must not be counted on for a majority of the reductions. Many existing programs disproportionately target manufacturers as the point of regulation when they are only a part of the overall universe of emitters.
- The math matters. The average manufacturer pays \$19,564 per employee, per year to comply with regulations, nearly double the amount of other companies.¹⁰ Small manufacturers pay even more, incurring regulatory costs of \$34,671 per employee, per year.
- Any new cost a climate policy imposes will be added to that already hefty base of regulatory expenditures. Congress should consider reducing regulatory, tax or other economic burdens on manufacturers to compensate for new costs attributable to climate policy. Incentive-based reduction policies can reward first movers without penalizing smaller manufacturers lacking access to capital.
- Domestic policy must work in lockstep with a global framework to avoid carbon leakage. Because GHGs have the same climate impact regardless of where they are emitted, carbon leakage effectively moves the problem rather than solving it. Similarly, policymakers should focus on key economic viability metrics like cost-per-ton avoided in assessing options.

Preserve Consumer Choice and Manufacturing Competitiveness

Our approach should be material and fuel neutral. Addressing climate change should not automatically require the phaseout of any manufactured product from the economy. Even the most carbon-intensive goods can have substantial beneficial uses; an effective climate policy provides these sectors the tools and strategies to innovate, preserving consumer choice.

Manufacturers must be given credit for early action. We are not starting from zero. For instance, the aluminum industry has made voluntary efforts to reduce its GHG emissions since the early

1990s.¹¹ The industry entered into a voluntary partnership with the EPA in 1995 and has reduced its total GHG emissions by 40% as a result. Many other sectors, from semiconductors to landfills, have stood up similar early action programs. These sectors have expended resources to fight climate change already and have largely picked all the low-hanging fruit available to them to reduce emissions. Any climate legislation must give these companies credit for early action, as it will be much harder for them to eliminate the next ton of CO₂ than for a sector that has taken no action at all.

A strong unified policy will also provide maximum compliance flexibility. There are countless strategies for reducing GHG emissions, and for such a pressing challenge, all options should be on the table. No two manufacturers operate exactly the same way. For that reason, climate policy should provide maximum compliance flexibility to each manufacturer so that we can quickly adapt to each unique situation.

IMMEDIATE ACTIONS

While steps one and two are being worked out, additional bipartisan proposals that will reduce emissions immediately should be implemented.

Arriving at an effective international agreement and unified domestic policy will take time. So pursuing these lofty goals should not be used as an excuse to delay action. While steps one and two are being negotiated, policymakers should enact the following bipartisan proposals, which will reduce emissions immediately and accelerate the U.S. response to climate change.

- **Massively invest in public- and private-sector energy and water efficiency.** These oft-ignored strategies can generate significant climate savings. The International Energy Agency found that energy efficiency alone could meet up to 40% of the Paris Climate Agreement's global GHG reduction goals.¹² A recent study by the Natural Resources Defense Council projected that the United States could get almost 42% of the way toward reaching an 80% GHG emissions-reduction goal just by maximizing energy-efficiency investments and strategies.¹³
- **Fund and expand climate and clean energy R&D federal programs at the Department of Energy and elsewhere.** Federal agencies house a multitude of valuable tools and resources to help reduce emissions, such as the Advanced Research Projects Agency – Energy, the DOE Advanced Manufacturing Office and the Federal Energy Management Program. These programs should be sufficiently funded and expanded. The NAM further recommends establishing a dedicated program office at the DOE to help energy-intensive manufacturers decarbonize.
- **Pave the way for a smart grid.** Modernization of the electric grid will allow for better integration of advanced technologies, on-site generation and end-use efficiency. It would also reduce GHG emissions. A recent DOE study found that smart-grid improvements could eliminate 277 million to 359 million tons of CO₂ per year.¹⁴
- **Commercialize and deploy carbon capture, utilization and storage technology.** The expanded Section 45Q carbon capture tax credit Congress established in 2018 was a positive development for CCUS adoption. However, for the 45Q tax credit to achieve its potential, regulators must continue clarifying the rules to access the credit and Congress should extend and expand the credit so that project developers have the certainty they need to make investments in CCUS projects. Lawmakers should also develop a clear standard for the handling of long-term liability for CO₂ transfers; resolve pore space ownership issues; correct barriers to CO₂ storage on federal lands; reform the class VI underground injection program to foster the build-out of underground CO₂ storage projects; increase funding for federal CCUS research, development and demonstration programs; ensure programs are authorized; and reduce permitting barriers that delay construction of CCUS projects.

- **Ratify the Kigali Amendment.** The Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer was agreed to in October 2016 by 197 countries and entered into force in January 2019. The Kigali Amendment sets a path for phasing down HFCs, GHGs that are used in many manufactured products. HFCs were primarily used to replace ozone-depleting substances, but their high potency as GHGs has led to the development of replacement products with a smaller environmental impact. These products already exist or are close to market. The Kigali Amendment would reduce the global warming equivalent of 80 billion metric tons of CO₂ by 2050. It could also create up to 150,000 more U.S. jobs by 2027.¹⁵ Recently, Congress listened to manufacturers and passed a deal to phase down HFCs in alignment with the Kigali Amendment, but full ratification would further strengthen our global leadership and push countries like China and India to follow.

“Now is the time to focus on sustainability across the entire manufacturing industry. We see a future where waste materials supplement and eventually become the new raw material source, supporting carbon neutral production. To get there, we have implemented a strategy that addresses everything from product design and R&D, such as developing materials from waste CO₂ and renewable sources, to partnerships and infrastructure, including embedding advanced chemical recycling and renewable energy into our supply chain. All of this is part of our long-term vision to become fully circular.”

– Haakan Jonsson, Chairman and President, Covestro LLC

“International Paper recently announced its Vision 2030 goals, which demonstrate its commitment to building a better future for people, the planet and the company. Through the goals, one of the world’s leading producers of renewable fiber-based packaging, pulp and paper will advance its contributions to the circular, low-carbon economy while building on its commitments to its people and communities.

“As a global leader in the forest products industry, International Paper is uniquely positioned to drive significant progress in the circular economy. Our Vision 2030 goals demonstrate our commitment to creating long-term value for all stakeholders.”

– Mark Sutton, Chairman and CEO, International Paper

“It is our responsibility to empower employees across Saint-Gobain North America to push boundaries every day to realize our vision and lead us into a sustainable future. In 2019, Saint-Gobain’s global network committed to net-zero carbon emissions by 2050, adding on to a previous commitment of reducing CO₂ emissions by 20% by 2025. Among our efforts to accomplish these goals is our 12-year virtual Power Purchase Agreement to help offset our U.S. CO₂ emissions while supporting the construction of Blooming Grove Wind Farm in Illinois. This is not only the largest renewable energy deal in Saint-Gobain’s history, but also reduces our overall carbon footprint in the U.S. by 21%. Saint-Gobain’s commitment and investments in sustainability are continual—in 2020 alone, the company earmarked an additional \$10 million in capital funds to deploy against water, CO₂ and waste-reduction projects across North America. All our sustainability efforts are in alignment with our corporate purpose and are driven by the tenacity and ingenuity of our employees.”

– Mark Rayfield, CEO, Saint-Gobain North America and CertainTeed

THE PROMISE AHEAD

Taken together, these actions would put our country and our world on the path to a far more promising future—one where the environment, the economy and people can thrive.

Manufacturers embrace our role in helping to protect our planet and to build a sustainable and strong economy. The industry is already leading the way forward. Complicated work awaits policymakers, but there are steps that they can take right away, and manufacturers will lend our support. Inaction is not an option. Delay will only make the solutions more difficult.

This is our time to secure the promise ahead.

References

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