Testimony of
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Hearing on:
"Reduce, Reuse, Recycle, Reform: Addressing America's Plastic Waste Crisis"

House Committee on Energy and Commerce
Subcommittee on Environment and Climate Change
March 4, 2020

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The American Chemistry Council (ACC)[1] is pleased to submit this Testimony to the Subcommittee on Environment and Climate Change of the Committee on Energy and Commerce regarding the hearing titled, "Reduce, Reuse, Recycle, Reform: Addressing America's Plastic Waste Crisis."

ACC and our members are deeply committed to ending plastic and other waste in the environment and creating a more circular economy for plastics. We agree that plastic waste in the environment is unacceptable and that the benefits of plastic are diminished when it ends up in the marine environment or improperly on land. We believe these challenges, while significant, are ultimately solvable. The stakes are high: plastics are critical to modern society, from light-weighting vehicles to reduce their emissions, to sealing and insulating our offices and homes, to delivering essential health care, preserving food and preventing food waste, and contributing to an overall higher quality of life.

For these reasons, ACC and our members have established goals to reuse, recycle and recover all plastic packaging in the United States by 2040 and make all plastic packaging recyclable by 2030. Our members are financing new waste management infrastructure projects around the world, forging domestic and international alliances, and supporting legislation at all levels of government to take the problem on directly. We know that through education, collaboration and innovation, and with the right set of domestic policies, we can collectively address the problems associated with plastic waste, conserve and protect the environment, and grow jobs and the economy through new business models and improved traditional and advanced recycling technologies.

My testimony today provides an overview of the investments the ACC and its members are making around the world and policy recommendations to address plastic waste and improve recycling and circularity for plastics.

Ending Plastic Waste in the Environment

ACC and our member companies have been cornerstones of the global effort to address marine debris and plastic waste. In January 2019, global companies in the plastics value chain, from manufacture to disposal, including many ACC members, announced the creation of the Alliance to End Plastic Waste.[2] This non-profit organization is committing $1.5 billion over five years to help end plastic waste in the environment and will focus on providing solutions to the largest sources of plastic in our ocean. Initially that work will be largely focused on so-called "high

[1] ACC represents a diverse set of companies engaged in the U.S. business of chemistry, a $768 billion enterprise that is helping to solve the biggest challenges facing our country and the world. Chemistry touches 96 percent of all manufactured goods, and the use of plastics in modern automotive, building and construction, and food packaging industries is helping to create a more sustainable society.

[2] https://endplasticwaste.org/

leakage" countries—where waste collection and management has not kept pace with growing populations and growing economies. A study in *Science* magazine[3] estimates that almost 60 percent of plastic waste going into our oceans comes from just five countries, primarily in Southeast Asia. Although the United States accounts for less than one percent of this plastic waste, ACC and its members have committed to reusing, recycling or recovering all plastic packaging by 2040 and making all plastic packaging reusable, recyclable or recoverable by 2030.

ACC also helped launch Circulate Capital[4], a $106 million fund that provides zero-interest financing for waste management infrastructure projects in South and Southeast Asia. The fund seeks to implement many of the findings from the Ocean Conservancy's Trash Free Seas Alliance reports *Stemming the Tide*[5] and *The Next Wave*. Stemming the Tide found that improvements in waste management are critically needed to stop plastic waste in China, Indonesia and the Philippines.

ACC has also led the development of The Declaration of the Global Plastics Associations for Solutions on Marine Litter, announced at the 5th International Marine Debris Conference in 2011. Otherwise known as the Global Declaration, this is a global commitment to combat ocean pollution. Since its inception, seventy-five plastics associations in 40 countries have signed the Declaration and more than 355 projects to address marine debris are planned, underway, or have been completed around the globe. We are working to advance innovative new technologies, increased traditional and advanced recycling infrastructure, develop new uses and end markets for recovered plastics, and a number of other innovative solutions to reduce the amount of plastic that ends up in the environment.

Federal Legislation

In addition to our efforts to end plastic waste in the environment, ACC and our members continue to support federal legislation that will help improve plastic recycling and recovery in the United States. We have actively supported the bipartisan Save Our Seas (SOS) Act (versions 1.0 and 2.0), as well as the RECOVER Act, the RECYCLE Act, and the PLASTICS Act, which seeks to reduce ocean plastics by encouraging innovative, market-based solutions and catalyzing private capital to enable the development of integrated waste management systems and strengthen markets for recycling materials. ACC members are leading in the deployment of system improvements and technology advances to convert a variety of used plastics into resources to make new plastics and other valuable products. The Save our Seas Act, passed in 2018, is a well-designed and thoughtful piece of bipartisan, bicameral legislation. ACC and our members supported the legislation, which emphasized greater engagement with the key source countries of marine debris; ensured that

[3] Jambeck, "Plastic waste inputs from land into the ocean," *Science* (Feb. 2015), *available at* https://science.sciencemag.org/content/347/6223/768.
[4] https://www.circulatecapital.com/
[5] https://oceanconservancy.org/wp-content/uploads/2017/04/full-report-stemming-the.pdf

precious waste management resources, technologies and investments are allocated to where they are needed most; and reauthorized the Marine Debris Act, which provides provisions to further study land-based waste management solutions and causes of marine debris, as well as increase investment and technical assistance to help expand waste management systems and best-practices in rapidly industrializing nations.

Similarly, ACC supports the Save Our Seas 2.0 Act, which supports scientists and agencies in studying innovative ways to repurpose used plastics and studying ways to repurpose plastics in infrastructure projects, such as roads and bridges. We believe these actions will help accelerate progress toward a circular economy for plastics in the United States and abroad. Additionally, SOS 2.0 would create a revolving fund to strengthen domestic recycling.

The RECYCLE Act will improve the effectiveness of residential and community recycling programs through increased public education and outreach. At present, studies show that about 25 percent of recyclable materials are lost due to a lack of knowledge about what should and should not be placed in recycling bins. By promoting education and best practices, the RECYCLE Act will improve both the quality and quantity of materials collected for recycling. This much needed legislation will not only help to optimize our existing recycling infrastructure; by increasing collection, it will provide a critical foundation to support a class of advanced technologies that could revolutionize the way we use—and reuse—plastics.

The RECOVER Act establishes a Recycling Infrastructure Program within EPA to award financial assistance to States, local governments, and tribal governments. Funding will support and expand the recycling infrastructure and recycling programs in such States, local governments, and tribal governments.

Creating a Circular Economy for Plastics

The plastics industry continues to move towards a more circular economy for plastics. In 2018, America's plastic makers established a goal of making all plastic packaging in the United States reusable, recyclable, or recoverable by 2030 and for all plastic packaging to be reused, recycled, or recovered by 2040.

Seeking to improve domestic recycling of plastics, the Foundation for Chemistry Research and Initiatives, a separate non-profit organization established by ACC, launched the Materials Recovery for the Future[6] (MRFF) project. MRFF supports advanced sorting technology to allow flexible plastics to be recycled in curbside bins. In addition, ACC's Wrap Recycling Action Program[7] (WRAP) is a partnership with US EPA, The Sustainable Packaging Coalition and several state governments. WRAP educates consumers on the ability to take polyethylene film including

[6] https://www.materialsrecoveryforthefuture.com/
[7] https://www.plasticfilmrecycling.org/

bread, dry cleaning, and retail bags and product wraps including wraps around paper towels, cases of soda, diapers, other wraps and mailers used by companies like Amazon back to over 18,000 retail stores nationwide. This material can then be recycled into composite decking material or new bags and film.

ACC's Chemical Recycling Alliance actively supports the development of advanced recycling, including non-combustion technologies such as pyrolysis, gasification, purification, and other technologies. These technologies capture the value of plastics not recycled mechanically and convert them into a variety of valuable end products including feedstocks for new plastics. An analysis by Good Company in Eugene, Oregon found that pyrolysis technologies have very low emissions including lower criteria air pollutant emissions than sources such as hospitals, universities and food manufacturing.[8] Additionally, the U.S. Department of Energy's Argonne National Laboratory recently added plastics-to-ultra-low-sulfur-diesel to its Greenhouse Gases, Regulated Emissions and Energy Use in Transportation (GREET) model. GREET models over 100 different fuel pathways and found that compared to virgin ULSD, that using plastics as the feedstock would reduce fossil energy use by 96% and fresh water use by up to 58%. These findings were peer-reviewed and published in the scientific journal *Fuel*.[9]

China Sword Creating New Domestic Recycling Opportunities

For decades, China has dominated the markets for many recyclable commodities, including mixed paper and non-bottle rigid plastics. Domestic recyclers simply have not been able to compete against China. In addition, communities (particularly on the West coast) relied on this market and did not invest in improving sortation that would be required to make segregated resin bales needed by domestic processors. Thus, China's National Sword policy that restricted imports has resulted in serious disruptions to recycling programs in the U.S. and around the world. This disruption, while costly over the last year and a half, has created an unquestionable opportunity for U.S. investment. Over the last 18 months, we have seen more than $4.2 billion in new investments in plastics recycling with potential to divert 6 billion pounds of plastics from landfill.

In addition to increased recycling investment, growing market demand for recycled content is being driven by consumer goods companies. Over thirty-seven of the largest consumer brands and retailers have made public commitment to use between 20 and 100 percent recycled content in packaging by 2025. Today's domestic recycling infrastructure is unable to meet this demand. Additional investments in mechanical and advanced recycling will be needed to achieve company

[8] *Comparison of Plastics-to-Fuel and Petrochemistry Manufacturing Emissions to Common Manufacturing Emissions*. July 24, 2017. Good Company, Eugene, Oregon. https://plastics.americanchemistry.com/Plastics-to-Fuel-Manufacturing-Emissions-Study.pdf

[9] *Life cycle analysis of fuels from post-use non-recycled plastics*. Fuel 203: 11-22 September 2017. https://www.researchgate.net/publication/316525873_Life-cycle_analysis_of_fuels_from_post-use_non-recycled_plastics

targets. Closed Loop Partners' recent study, *Advancing Circular Systems for Plastics*[10], identified a market opportunity in North America of $120 billion annually for advanced recycling. This market reflects those outputs that have a pathway back to plastics. Demonstrating the market viability, there are 40 advanced recycling facilities already in operation, with more planned. There are many new developments in advanced recycling that are attracting attention:

- Nexus Fuels in Atlanta, GA is transforming post-use plastics into useful liquids that are being used by Shell to make a range of chemicals.
- Agilyx in Tigard, OR is partnering with Delta Airlines to convert post-use plastics into jet fuel.
- Agilyx and Americas Styrenics are currently converting thousands of tons of post-use polystyrene back to styrene monomer for new plastics via their jointly-owned facility in Tigard.
- Brightmark Energy expects their $260 million new advanced recycling facility in Ashley, Indiana to be operational by the end of 2020. It will convert 100,000 tons of plastics into 18 million gallons of diesel and naphtha for BP and nearly 6 million gallons of wax.

State policymakers have taken notice and are eager to attract greater investment in their states while simultaneously boosting end markets for post-use plastics. Legislation to regulate these technologies as manufacturing facilities, as opposed to solid waste facilities, has been passed in a number of states, including Florida, Wisconsin, Georgia, Iowa, Tennessee, Texas, Illinois and Ohio. With the right policies, ACC projects that the U.S. could support up to 260 advanced recycling facilities, generating nearly 39,000 jobs and $9.9 billion in economic output.

Finally, the U.S. Department of Energy (DOE) has taken notice and recently announced its Plastics Innovation Challenge, which includes a heavy focus on spurring innovative new technologies. ACC and DOE recently signed a Memorandum of Understanding to work towards evaluating and advancing new innovations and technologies. Congress ought to consider how it can also play a role in scaling innovation of new technologies that can convert post-use plastics into a wide range of valuable end products.

Product Bans Would Increase Environmental Impacts

While ACC strongly supports efforts to end plastic waste in the environment and bipartisan legislation including SOS 2.0 and the RECOVER, RECYCLE and PLASTICS Acts, ACC must oppose H.R. 5845, the "Break Free From Plastics Pollution Act," that would ban many plastic products, impose a moratorium on new plastic plants and require renewable energy for only plastic production. Focusing on plastic product bans without consideration of the availability and environmental impacts of alternatives is counterproductive. Studies by TruCost and Franklin & Associates show that alternatives to plastics have greater environmental impacts such as greater energy use, increased greenhouse gas emissions and more waste. In the 2016 report, the

[10] https://www.closedlooppartners.com/research/advancing-circular-systems-for-plastics/

environmental accounting firm Trucost found the natural capital cost of plastic in 16 sectors to be $139 billion but the environmental costs for alternative materials was estimated at $533 billion annually. This 3.8-fold increase in natural capital costs of alternatives included greenhouse gas emissions, marine litter, and other impacts. In a study of plastic packaging compared to alternatives, Franklin Associates found that greenhouse gas emissions would be doubled by banning plastic packaging.[11]

The potential for policies to increase environmental impacts is especially large for packaged goods, such as food, which often requires a significant amount of energy and water to produce. According to the United Nations' Food and Agriculture Organization (FAO), one-third of all food produced never reaches the consumer's table. FAO further estimates that this food waste results in a greenhouse gas impact of 4.4 $GtCO_2$, which would rank third in terms of total greenhouse gas emissions behind only China and the United States.[12] Reducing food waste through improved handling, logistics, and packaging of food means reducing greenhouse gas emissions—and those reductions are driven in large measure by the use of plastic packaging.

Although bans would increase environmental impacts, ACC supports policies that reduce waste and unnecessary consumption such as straws upon request. This policy, rather than banning products, allows consumers to ask for a straw when they need one or decline it when they do not. This common-sense approach reduces waste without burdening families with small children, the elderly, or people with disabilities.

Conclusion

The American Chemistry Council appreciates the need to address plastic waste and domestic recycling infrastructure in a sustainable, circular way and supports several legislative and regulatory efforts to do so including the Save Our Seas, RECOVER, RECYCLE and PLASTICS Acts. ACC and our member companies remain committed to addressing the national and global challenge of plastic waste in the environment. Thank you for the opportunity to testify today. I look forward to working with the Committee.

[11] https://plastics.americanchemistry.com/Reports-and-Publications/LCA-of-Plastic-Packaging-Compared-to-Substitutes.pdf
[12] http://www.fao.org/food-loss-and-food-waste/en/