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Written Statement

**Oversight Hearing on “A Sea of Problems: Impacts of Plastic Pollution on
Oceans and Wildlife.” before the Subcommittee Water, Oceans and Wildlife
House Committee on Natural Resources
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Good afternoon Mr. Chairman, the ranking member and members of the subcommittee. Thank you for having me here to speak today.

My name is Tony Radoszewski and I am the president and CEO of the Plastics Industry Association. We call ourselves PLASTICS for short, and we use that term proudly.

Founded in 1937, we're the only association that supports the entire plastics supply chain, and we have a track record of fostering collaboration between each segment of the industry.

We believe in working to make our members and the industry more globally competitive. We believe in advancing sustainability and being a good steward of resources. We believe in promoting plastics manufacturing as a viable career option.

We provide education to the industry and to the public about plastics. We support technology-driven innovation to solve problems. We work to change the public's perceptions about plastics and show how they impact our lives for the better. We understand what's important to our members' business and we advocate on their behalf to enact sustainable policies and create sustainable business growth for the industry.

Our councils, committees and events such as our signature global tradeshow NPE®, bring the boldest and brightest innovators, influencers and new technologies together to create connections, expand business growth and showcase our industry.

We're dedicated to helping our members shape the future and make a positive impact every day.

Plastics themselves were first developed by John Wesley Hyatt in the 19th century as a synthetic replacement for ivory in billiard balls.

Ivory was expensive and the process of collecting it was gruesome and inhumane. So, Hyatt tinkered around in his lab and developed a material that could behave like ivory but at a fraction of the cost and a fraction of the environmental impact.

That's the been the story of plastics from their genesis to today; it's a material that does what other materials can't and does so at a fraction of the cost and a fraction of the environmental impact of other materials.

Since they were first developed, plastics have grown to make hospitals safer, surgeries less invasive, patient care more sterile and effective and affordable—they do things in the medical realm that could scarcely have been dreamt of by the original innovators and creators of this material: stents, prostheses, bandages, replacement hips, shoulder sockets, knees, antimicrobial surfaces, dissolvable sutures, syringes, pill bottles, contact lenses and on and on and on.

In the century and a half since they were invented, plastics have also made cars, trucks and planes more efficient, more affordable, more environmentally friendly and safer.

In the United States and around the world, plastic pipe brings fresh water to people and takes wastewater away for treatment in the most economical and environmentally sustainable way. In developing countries, this one aspect has significantly improved the health and viability of millions of people.

And a similar story takes place in food packaging. Plastics make food last longer and enabled it to travel farther to help feed those most desperately in need of assistance. Again, peoples' quality of life, especially in developing countries, is dramatically improved due to the use of plastics.

Why would anyone want to ban such a material?

The plastics industry employs 993,000 people in the U.S. The state with the largest number of plastics employees is California, where 79,700 men and women are directly employed by our industry. I can say with confidence that none of them got into this business in order to pollute our oceans and waterways.

That our products end up where they shouldn't upsets me and every one of those nearly one million people who not only rely on this industry to make a living, but innovate with passion.

But it is a fact. It is a fact that a [staggering eight million tons of plastics ends up in the world's oceans each year](#)—90% of which originates from 10 rivers in southeast Asia and Africa. The remaining 10% comes from elsewhere around the world. There's a great deal of value being flushed down the drain when these products end up in lakes, rivers and ultimately oceans.

Our industry agrees that there is a plastic waste problem. But the urgency of the situation cries out for a solution more thoughtful than simply saying no to a material that lowers greenhouse gas emissions, is more efficient to produce than other materials like metal, paper and glass, and has delivered numerous benefits to society as a whole.

Study after study—including one conducted recently by the California water board—has shown that banning a plastic product simply drives consumers to other less sustainable materials. Bans have a very minor impact on litter, if they have any impact at all.

Take plastic bags, for instance.

Plastic bags make up extremely small percentages of the waste and litter streams, which is why banning them doesn't have much of an impact. According to the EPA, they make up 0.3% of municipal solid waste and they typically make up less than 1% of litter (branded plastic retail bags made up 0.8% of litter in New Jersey, for example).

Alternatives to plastic bags are also often worse for the environment. Paper, woven polypropylene, and cotton/canvas bags all have a higher carbon footprint than traditional plastic bags. The UK, Denmark, and Quebec governments all did studies on this and came to a similar conclusion—plastic bags are the best environmental option at the checkout counter.

California's plastic bag ban led to an increase in carbon emissions due to increased paper bag usage as well as skyrocketing trash bag sales, which use more plastic (see NPR article and the study). Overall, if you ban plastic bags, you will see fewer of them around. But consumers will switch to options that have a much higher carbon footprint, and litter and waste won't be meaningfully changed for the better.

This is true for bags but also for product bans in general. As an example, McDonalds in the United Kingdom and Ireland banned plastics straws and replaced them with paper ones. The company recently was forced to admit that the new paper straws weren't recyclable. Many consumers also don't like paper straws either. As mentioned before, banning a product drives consumers to use other less sustainable and less functional options while having a negative economic impact on the industry and its workers.

Plastics and plastic products exist for a reason.

They're used in such a diverse array of applications because they are the best option when all considerations are evaluated. In a free market society like we enjoy here in the U.S., the marketplace is driven by consumer demand, which determines which products provide the best value and performance. In so many applications, the chief characteristics of plastics—that is, their lower weight, durability, flexibility and versatility—constantly make them superior to other competing materials.

Even products that we encounter here in the U.S. in our day-to-day lives solve problems. Plastic bags became popular due to concerns about how many trees we were cutting down to make paper bags. Plastic bottles are lighter and don't break as easily as glass ones, reducing product loss and shipping costs. When they're disposed of properly, these plastic products have a smaller environmental footprint than identical products made of other materials.

Rather than trying to deny the value of plastics, we need to head in the opposite direction and aim to preserve and enhance their value so that they're worth too much to waste. This can happen by investing in recycling and waste management infrastructure.

We continue to support legislation that would provide grants through the Environmental Protection Agency to state and local entities to improve recycling infrastructure—which is what we need to close the loop on these issues.

This could be as simple as an education program on recycling in a particular community to the provision of new optical sorting equipment within existing Materials Recovery Facilities (MRFs). Simply put, we need to improve the collection of materials as one way of keeping it from becoming waste in a landfill, or litter in the ocean or along the side of the road. We believe having a reliable, steady supply of recovered material will encourage companies to use more recycled content.

Making it easier for consumers to recycle is a major factor in keeping our products out of the water and other environments where they do not belong. We would certainly support efforts to raise awareness on the impact of littering and better waste management practices. But this should not be the only tool deployed to address this challenge. The industry supports voluntary, industry-led or public-private initiatives designed to increase the recovery of plastic materials that meet the standards of Sustainable Materials Management (SMM) analysis. Such initiatives could include programs aimed at increasing the use of post-consumer recycled material or bioplastics, as long as the industry has been

involved in the creation of such initiatives, and they can be supported by economic analysis, adequate supply and transition time and remain consistent with other regulatory requirements pertaining to the manufacture and use of the product, such as food packaging safety rules.

Additionally, any potential language that imposes a fee on containers or packaging should apply to all materials—not just plastic—as all materials are found in the waste stream.

PLASTICS advocates for the use of SMM as a guiding policy principle—one that considers the entire ecosystem of the product and prioritizes the use of materials and processes that consider total energy and resource inputs throughout the entire lifecycle of a product and minimizes associated waste. SMM's holistic approach achieves this goal by using metrics like greenhouse gas emissions, water usage and transportation efficiencies for different materials, and comparing their advantages while meeting economic, social and environmental requirements. With that in mind we would caution against any product ban that does not consider the implications of what would replace that product. In many cases, what is broadly considered a “single-use” plastic product is the more environmentally sound choice when considering the manufacturing process, shipping and recyclability over the life of the product. Shortsighted bans would only create more problems without proper, detailed analysis.

We've also supported the Save Our Seas 2.0 Act which aims to improve efforts to combat marine debris and is currently seeing action in various Senate committees with companion legislation having been introduced here in the House.

Save Our Seas 2.0 is an important, bipartisan step forward to address the critical issue of marine waste and its impact on the environment. The legislation will build upon the progress the industry is making to address marine debris across the world. New proposals like the Marine Debris Response Trust Fund, as well as more research to understand the root causes of this global issue and federal support for improving water and waste management infrastructure are all critical to any effort to comprehensively address the threat marine debris poses to our oceans and waterways.

The industry itself has stepped up to the plastic waste challenge by innovating like it always has—developing new chemistries, investing in new recycling and collection technologies, developing ways to convert plastic waste into energy and creating the supply to meet the demand for recycled plastic content.

In addition to finding new ways to increase the effectiveness of traditional recycling—typically a curbside pickup program or local drop off—the industry has explored advanced recycling through the use of new additives like compatibilizers that help incompatible resins chemically bond, and property enhancers that improve the strength, quality and ultimately value of recycled materials.

The industry is also building on processes like chemical recycling, pyrolysis and gasification. Each of these processes are used to turn plastic polymers back into individual monomers—allowing materials to be reused in a variety of ways. In these processes, the chemical building blocks that make up the recycled plastic are recovered. The fundamental building blocks can in some cases be re-polymerized endlessly, giving them the qualities of brand-new, or virgin, resin. The transformation can occur through a variety of processes, all of which avoid combustion, or burning, of plastics.

Chemical recycling is any process by which a polymer is chemically reduced to its original monomer form so that it can eventually be processed (re-polymerized) and remade into new plastic materials that go on to be new plastic products. Chemical recycling helps us overcome the limits of traditional recycling. It also helps manufacturers continue to push the boundaries of how, and where, recycled plastics can be used. Chemical recycling has long been used for nylons, and the industry is working to make it possible for other resin types.

Pyrolysis, sometimes called “plastics to fuel,” turns non-recycled plastics from municipal solid waste (garbage) into a synthetic crude oil that can be refined into diesel fuel, gasoline, heating oil or waxes. Using pyrolysis to convert non-recycled plastics into ultra-low sulfur diesel (ULSD) fuel reduces greenhouse gas emissions by 14% and water consumption by 58%, and it saves up to 96% in traditional energy use as opposed to ULSD from conventional crude oil.

Gasification turns non-recycled materials from municipal solid waste (garbage) into a synthesis gas, or “syngas,” which can be used for electric power generation or converted into fuel or chemical feedstocks, such as ethanol and methanol, some of which can also be used to make new plastics that go into consumer products.

Numerous companies are already engaged in these processes across the country:

Agilyx, an alternative energy company, recycles polystyrene (which most people know as Styrofoam™) into high-value petrochemicals. Agilyx's polystyrene recycling process creates like-new materials while generating fewer greenhouse gases than manufacturing does.

Shaw Industries Group uses chemical recycling for nylon and polyester fiber in carpets. The company has invested more than \$20 million to convert products that were once seen as waste into valuable resources. They reclaimed and recycled more than 800 million pounds of carpet from 2006 to 2015.

Resinate Materials Group collects chemicals from plastic materials and works to promote the practical and economical value of chemically recycled plastics. The company has found several high-value applications for the chemicals harvested from recycled medical plastics. It uses certain types of recycled packaging to create coatings, adhesives and sealants.

Patagonia, an outdoor clothing brand, chemically recycles non-wearable Capilene® polyester and fleece products. Today, the brand features a collection of products made completely from recycled materials. Patagonia's chemical recycling process uses 76% less energy than the process used to make new polyester.

Beyond that, the industry continues to expand its energy recovery capacity, which enables companies to convert post-use, non-recyclable plastics into a range of useful products such as fuels and electricity. Unfortunately, there are still some items that we can't recycle at this time and these items are typically sent to landfills.

Energy recovery technologies are changing that. They complement recycling to add a new dimension to the solid waste management toolkit.

It all starts with waste. Municipal solid waste is an underutilized resource of energy that can boost energy security, reduce landfill waste and lower greenhouse gas emissions. Energy recovery is a powerful process that has the potential to change the way we fuel the world. If all the non-recycled plastics in municipal solid waste were converted to oil instead of landfilled, these plastics could power up to [nine million cars per year](#).

When it comes to traditional recycling, companies are making big investments and commitments to collect more material and find new uses for it.

For instance, here are a few recent examples of companies investing in expanding recycling:

- GDB International is making “sizeable investments” in New Jersey and Ohio to pelletize plastics that were previously being sent to China.
- PureCycle Technologies is building \$120 million polypropylene recycling facility in Ohio.
- East Terra built a new facility in Indiana.
- Merlin Plastics in British Columbia and Peninsula Plastics in California have made significant investments in mixed plastics recycling for the west coast.
- Azek invested in 100-million-pounds per year processing line for PE films in Illinois.
- Green Tech Solution plans to invest \$75 million in a new plastics and metals recycling facility in Blacksburg, South Carolina.
- The Carton Council invested in artificial intelligence and robotics to help MRFs sort recycled materials more efficiently in Colorado, Minnesota and Florida.

That’s just an example list. Additionally, we are seeing major shifts in the behaviors of plastics material suppliers who are forming strategic relationships with recyclers and brands. Again, some examples:

- Indorama entered a joint venture with Loop Industries for PET monomers from chemical recycling.
- Americas Styrenics has an off-take agreement with Agilyx for styrene monomer from chemical recycling. This joint venture is now call Regenyx and is moving quickly to commercial scale operations.
- LyondellBasell entered an agreement with Suez to jointly own QCP. This joint venture leverages the two partners' strengths and provides a platform for growth.
- Pepsi signed a multi-year supply agreement with Loop Industries.
- BP has an off-take agreement for oil produced by RES Polyflow from their pyrolysis system.
- A partnership was announced between the ReVital Polymers startup Pyrowave, and global plastics producer INEOS Styrolution to recycled polystyrene packaging.

The plastics industry is changing the ecology of how plastics are made and the supply chains that create them.

Brand Owners are also making unprecedented commitments to using recycled content. Those growing commitments are being tracked in the Sustainable Packaging Coalition's Goals database.

There is not currently sufficient quantity and quality of material in the market today to meet the 2025 goals that have been set by big name companies. New investments will help meet that demand, but we must find a way to grow the supply of material available to feed the growing domestic recycling market—namely by implementing legislation that helps accomplish this goal.

The U.S. plastics recycling industry is undoubtedly in a period of transition, but it is certainly not dead. As a result of some of the challenges facing this sector, the U.S. domestic processing capability and capacity are growing more and more robust and able to handle more. The industry believes we must focus on how to improve our collection and recovery systems to expand recovery opportunities for more plastic products—while also creating new supplies of recycled plastics to feed domestic investments.

As an organization, PLASTICS has taken a leading role in promoting the aforementioned investments, commitments and technologies and exploring other ways to combat marine debris and deliver solutions to the end-users of our products.

PLASTICS leads the Pacific Northwest Secondary Sorting Demonstration project—a 60-day recycling demonstration that involves installing a portable secondary sorting system where selected materials from four regional MRFs will be further sorted. This innovation will help create six additional streams of recyclables which will reduce waste going to landfills or adversely affecting our environment.

Our Transportation and Industrial Plastics (TIP) Committee participates in the End-of-Life Vehicle (ELV) Recycling Project. Launched in 2015, the ELV project aims to demonstrate the viability of collection and recycling of auto plastics from ELVs and build a basic recovery model, beginning with thermoplastic polyolefin (TPO), which can be eventually expanded upon to include a broader range of resins and parts. To date, a variety of testing has been conducted on TPO recovered from bumpers and initial evaluation suggests there could be strong demand for the recycled TPO if the right end markets are identified. Through

collaboration with various other association and member companies, PLASTICS works to prove out those end markets, creating new opportunity for auto recyclers to generate revenue.

PLASTICS' Flexible Film and Bag Division launched the New End Market Opportunities (NEMO) for Film Project in 2017, which aims to develop a reliable source of materials for companies that can use recycled plastic bags, wraps and films in their products.

We're also a part of the Materials Recovery for the Future (MRFF) project which aims to make it easier for MRFs around the country to empower their communities with the ability to recycle flexible packaging—again, bags and wraps but also punches and other packages—in their normal recycling stream and curbside.

PLASTICS also offers a number of tools and resources to companies in the industry that they can use to make their own operations more sustainable:

We help educate companies on how they can turn their waste into valuable resources, or eliminate waste altogether using the tools offered through PLASTICS' Zero Net Waste program. Through this program manufacturers learn how to maximize diversion—achieving in some cases 90% recycling rates and even 100% recovery rates—engage employees in environmental efforts and avoid landfill costs and generate revenue by recycling.

Since the 1980s, PLASTICS and the American Chemistry Council (ACC) have jointly operated Operation Clean Sweep (OCS), an international stewardship program designed to prevent resin pellet, flake and powder loss and help keep this material out of the marine environment.

More recently we've hosted a series of presentations for the industry focused on advancing sustainability, specifically on subjects like energy reduction through the Better Plants Program, zero net waste, sustainability 101 for new professionals, water reduction, benchmarking, transportation efficiency and calculating economic impacts.

Despite all these efforts, we still need the support of federal, state and local authorities and new legislative solutions to ensure that no American has to wonder if the water bottle they toss in the blue bin will end up being recycled or if it will end up as landfill fodder.

Perhaps I could sum up our industry's position with a recent quote from Japan's Prime Minister Shinzo Abe: "We shouldn't treat plastic as an enemy, nor ostracize those who use it. What's needed is appropriate management of trash and to search for solutions through innovation."

Plastics are among humankind's greatest innovations and they've delivered an enormous benefit to public health and commerce all over the world. We need to learn how to live with these materials, because I can assure you, we would never want to have to live without them.

Thank you.