

HEARING ON THE CIRCULAR ECONOMY AS A CONCEPT FOR CREATING A MORE
SUSTAINABLE FUTURE

Wednesday, September 22, 2021

United States Senate

Committee on Environment and Public Works

Washington, D.C.

The committee, met, pursuant to notice, at 9:50 a.m. in room 406, Dirksen Senate Office Building, the Honorable Thomas R. Carper [chairman of the committee] presiding.

Present: Senators Carper, Capito, Cardin, Whitehouse, Merkley, Stabenow, Inhofe, Lummis, Sullivan.

STATEMENT OF THE HONORABLE THOMAS R. CARPER, A UNITED STATES
SENATOR FROM DELAWARE

Senator Carper. I am about to call this hearing to order. In fact, I will call this hearing to order, and I am going to invite our guests, our witnesses, as appropriate, to join us at the table with your nameplate.

I would like to start this morning by thanking this distinguished panel of witnesses for their willingness to join us today as we discuss an issue, and I think, an opportunity, of great importance: that is the transition to a circular economy. A warm welcome to Elizabeth Biser, Roberta Elias, Brian Hawkinson, and Billy Johnson. We look forward to hearing from each of you this morning.

I have to confess I love the idea of a circular economy. I studied a little economics at Ohio State as a Navy ROTC midshipman, not very much, but enough to get through and on to the Navy. But I love the idea of a circular economy. I love trying to figure out how to reuse market forces to get things done. I like the idea of considering the things and the materials that help constitute and make a circular economy possible, materials that can be reused over and over again instead of ending up in a landfill somewhere.

As an avid recycler and composter, I have always believed in environmental stewardship since my days growing up as a Boy

Scout in Danville, Virginia, where we moved from Beckley, West Virginia. Over the years, I have come to feel even more strongly that it is our moral duty to leave behind a cleaner, healthier planet for our children and for the generations to follow.

Let me make one thing clear: driving toward a circular economy is not just doing something about the disdain or disgust we feel in seeing the trash that litters too many of our highways and our streams. It is an essential part of the solution to a series of crises facing our Nation and our globe today: escalating climate change, overflowing landfills, and oceans that are choked with a mass of plastic greater than the weight of all the fish in the sea.

The actions that put us in this mess are not the fault of any one person. That is why it is up to all of us to work together on finding solutions. This is what we call in the Navy an all hands on deck moment.

Over the past few weeks, several of our Senate colleagues and I, including Senator Capito, Senator Boozman, Senator Whitehouse, Senator Merkley, and others have joined us in engaging with a host of stakeholders in a series of roundtable discussions on the concept of a circular economy, and what that concept looks like in practice across a multitude of industries and levels of government. What we heard was, in part, sobering,

but also, I am happy to report, it was encouraging.

We heard from solid waste workers about the challenges they face with contaminated recycling streams and the impact of China's National Sword Policy on their ability to effectively manage domestic waste, especially plastic.

We heard about the need for better product design and infrastructure upgrades so that companies can have their products returned to them in good condition to be reused.

We heard about the devastating impact of the fashion industry on our environment. Did you know that every second, almost a dump truck's worth of textiles goes into our landfills, every second, and that the fashion industry is responsible for something like 10 percent of global emissions, more than the aviation sector and maritime shipping sector combined? I didn't know those things. My guess is that most of our colleagues and their staff, our staffs, didn't know them, either.

Fortunately, we also discovered that with awareness and motivation, we can do a great deal to address the obvious need and change that these damaging behaviors provide.

One of those products that stood out for me was aluminum. Few of us realize, for example, that 75 percent of aluminum ever mined is still in use today. I am going to say that again: 75 percent of aluminum ever mined is still in use today. That is important because aluminum products made from recycled materials

use 95 percent less energy than it would take to create them from first-use materials, 95 percent less energy. Indeed, in most cases, recycled products are more energy-efficient, which translates directly into reducing greenhouse gas emissions, something we all know we need to do.

That is the power of a circular economy.

The roundtables also taught us more about the potential we have to recapture and recycle the critical minerals found in lithium-ion batteries. Of course, that capacity helps our Nation in many ways, driving us and our transportation fleet to a carbon-neutral future and relieving us from uncertain and oftentimes hostile foreign sources for those critical minerals.

Finally, we also heard great success stories from industries that have stepped up to take more responsibility for the full life cycle of their products. I am glad to see Mr. Hawkinson from the paper industry here today. Welcome, especially.

With a national recycling rate for all products, I believe it is right around 35 percent across the Country, the paper industry's recycling rate of over 60 percent, almost twice the national rate, really does stand out. The paper industry shows how companies can and should help the cause by ensuring that their products can live on by being recycled into new products. Thank you for that example. I can say we lead by our example.

Companies must step up and take greater responsibility for reducing, reusing, and recycling their products. While we can't make industry successful in this effort, we can help make it possible for industries to succeed. We know that if industry, along with environmental advocates, and all levels of government join forces to reach these inspiring and essential goals, the return on our investment will be exponential.

That is our challenge to our witnesses before us today, and frankly, to all of us. Please tell us what our government needs to do to better ensure that you succeed in your efforts to establish a circular economy, one that helps bring our solid waste problems under control, reins in unsustainable greenhouse gas emissions, reduces our overall consumption, and meets this critical moment in our Nation's history.

Someday, I expect to be asked in the future by our three sons and their children this question: "What did you do to stop climate change and help save our planet when you had the chance? What did you do, Dad?" I want to be able to look them in the eye and tell them that we did everything we could, everything we could. To me, today's hearing is an important step in enabling this Country of ours to do just that.

Let us seize the opportunity. Let us convey a strong sense of urgency and embrace the chance to create a circular economy that allows us to be our better selves, respecting our planet,

taking care of each other, and not wasting the precious resources that our creator has bestowed upon us.

Each of you as witnesses here today bear a larger than average share of the responsibility to get us to that better place. You have the knowledge, you have the skill, and I believe the will to do so. With apologies to the late Jim Morrison, I believe you have the will to do so to help us today to light your fire so that together, we can prevent many of the wildfires that have been engulfing large swaths of our Country throughout much of this year and last.

With that, I have said enough. I turn it over to Senator Capito, our Ranking Member, for any comments that she might like to make. Senator Capito, great to be with you.

[The prepared statement of Senator Carper follows:]

STATEMENT OF THE HONORABLE SHELLEY MOORE CAPITO, A UNITED STATES
SENATOR FROM WEST VIRGINIA

Senator Capito. Thank you, Mr. Chairman. Interesting reference to Jim Morrison.

Senator Carper. You just never know when he will pop up.

Senator Capito. He has a West Virginia connection, too.

Senator Carper. I am anxious to hear about it later.

Senator Capito. Thank you for calling today's hearing today.

Senator Carper. Would that connection be wild and wonderful?

[Laughter.]

Senator Capito. Probably.

Both Chairman Carper and I are members of the Senate Recycling Caucus, as are a few of our other EPW colleagues. We see recycling as a win-win solution that presents significant environmental and economic benefits.

Recycling can reduce waste going to landfills and the incinerators, conserve natural resources like timber and water, and save energy. In fact, many recent developments in waste management are reducing greenhouse gas emissions and contributing to an all-of-the-above strategy to address climate change.

Hand-in-hand with those environmental benefits, recycling

creates domestic jobs and supports American manufacturing. We have seen significant bipartisan progress on this issue in recent years when we passed our Save Our Seas Act and Save Our Seas Act 2.0, which help improve our ability to clean up waste and combat marine debris.

But marine debris is only one piece of the puzzle. There is also significant funding in the Infrastructure Investment and Jobs Act that the Senate passed last month, and we hope the House passes as well, for recycling infrastructure and education to reduce contamination in the recycling stream.

While these investments will help us to reach EPA's ambitious National Recycling Goal of recycling 50 percent of waste by 2030, other challenges do remain. I want to highlight two of the challenges today. One is the need to expand materials processing and manufacturing here in our own Country, and number two is a lack of demand for recycled materials.

The issues with China taking, or more recently, not taking our recycling materials and the issues with supply lines laid bare by the pandemic made clear we need to do more of the material processing and manufacturing right here in America.

The investments in our Nation's roads and bridges that are in the Infrastructure Investment and Jobs Act would help expand American manufacturing. Reliable infrastructure is critical for economic development and creating job opportunities.

When China stopped importing our trash, the economies of municipal recycling changed dramatically. Cities must incur significant costs to collect recyclables and, in some instances, the cost of paying businesses to accept those recyclables if they can no longer be profitably sold.

Some municipal systems have taken on the costs and burden of storing bales of recyclables waiting for an improvement to the market. This is all due to a lack of domestic demand for our recycled materials.

Market demand for these materials can create the incentives to invest in the recycling system and expand access to recycling across the Country, especially in rural areas like my State of West Virginia.

While some of my colleagues in Congress have proposed various policies, regulation, and mandates, they don't create effective long-term markets. Falsely inflating that market for recycled goods with federal dollars doesn't help, either. It simply prolongs the unviability of the sector, which could end up right back where we are today when the funding is gone.

The best way to address the depressed demand for recycled materials is to develop new innovative markets and technologies. Today, we will learn about one example from Mr. Hawkinson, and he was on our roundtable, we appreciate that, which is Georgia-Pacific's new Juno Technology that is rescuing recyclable

materials from trash.

Last week, Chairman Carper and I hosted a roundtable that the Chairman talked about, where we had the opportunity to learn about some of the technological advances in the recycling sector. For example, one company has successfully recycled over two million pounds of post-use polystyrene at their facility in Oregon through chemical recycling. Developing and deploying this technology could not have come at a better time, as this material was used in the COVID-19 vaccine production for everything from testing kits to the cooler shipment boxes that kept the vaccine at the needed temperature during delivery and storage.

Now, what would otherwise have been considered trash can be safely recycled into new products like medical grade and food grade plastic, while reducing waste that ends up in our landfills. The supply chain challenges that emerged and are still with us were among the most significant realizations that struck us, I think, during COVID-19, especially our reliance on other countries to produce essential products. I hope these realities won't quickly be forgotten and that we can use those experiences as motivation to retain and bring back manufacturing jobs in this Country.

One way we can accomplish this is fostering innovation and not stifling it. I look forward to hearing from our witnesses

today on the best way to accomplish that. Thank you, Mr. Chairman.

[The prepared statement of Senator Capito follows:]

Senator Carper. Senator Capito, thanks for a wonderful statement, and thanks even more for your leadership on this issue. We are working on a lot of issues together, and I am delighted this is one of them. It is certainly an important one.

I just want to give a shoutout to Senator John Boozman, who is the co-chair of the Senate Recycling Caucus, and his team for all of the work that they do. I think Taylor Meredith deserves a special shoutout from your team, Senator Capito, and from Senator Boozman's office, I want to mention Andrew Kelly and Joe Brown with a special thanks. We have on our own team here on the majority side of the committee, in addition, Annie, who is sitting over on my left shoulder, Mary Frances Repko, who is our staff director, John Keene, and Trevor Malone. I am grateful to all of you and more, all of you and more.

One of my favorite sayings is from the King Sisters from Kent County, Delaware, Dover, members of my team have been forever, teamwork makes the dream work, and we have got some pretty good teamwork on this committee, and we are going to try to get some dreams accomplished as a result.

Thanks again, Senator Capito, for your statement and for everyone who has worked to help make today possible.

I want to briefly introduce our witnesses, starting with Ms. Biser. She is the Secretary of the Department of

Environmental Quality for the State of North Carolina, my wife's native State. She sends her best to you today. Secretary Biser oversees the State agency, whose mission is to protect North Carolina's environment and natural resources. I understand that you live not far from where my wife's two sisters live, in the Greater Raleigh area. We thank you for joining us today.

We are also joined by Roberta Elias, the Director of Policy and Government Affairs at the World Wildlife Fund. Welcome, Ms. Elias. Great to see you.

Brian Hawkinson, again, of the American Forest and Paper Association, will be testifying today. Mr. Hawkinson is the Executive Director for Recovered Fiber at the AF&PA, and we want to thank you for joining us today. Good to see you, Mr. Hawkinson.

Our final witness, no stranger to these parts, Billy Johnson, Chief Lobbyist of the Institute of Scrap Recycling Industries, where he works with industry to advance recycling policies. Great to see you, Billy. Welcome today.

Why don't we start with Secretary Biser? You may begin when you are ready.

Senator Inhofe. Mr. Chairman, please?

Senator Carper. Senator Inhofe?

Senator Inhofe. Mr. Chairman, could I be recognized for unanimous consent request in that, this may go longer than I

anticipated it would. I do ask unanimous consent that the article I referred to earlier by Andrew Wheeler be made a part of the record of today's deliberations, particularly during the deliberations of Mr. Johnson.

Senator Carper. Without objection, so ordered.

[The referenced information follows:]

Senator Carper. Okay, with that, I think we are ready for our first witness, Ms. Biser.

STATEMENT OF THE HONORABLE ELIZABETH BISER, SECRETARY, NORTH
CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY

Ms. Biser. Chairman Carper, Ranking Member Capito, and members of the committee, thank you for the opportunity to speak with you today about North Carolina's approach to creating a circular economy.

The term circular economy means transitioning from a make-take-waste society to one in which we treat end-of-life materials as commodities that can be put to good economic use, creating jobs and economic investment in our communities.

North Carolina has long been on the path of creating a circular economy. In sharing our lessons learned with you, I am going the hearken back to how we all learned about environmental stewardship, the three Rs of reduce, reuse, and recycle.

I will begin with reduce. One of the best ways to reduce waste is to prevent it from happening in the first place. Nineteen years ago, my agency launched a program called the Environmental Stewardship Initiative. This free and voluntary program is open to any entity in North Carolina that wants to go above and beyond the minimum regulatory requirements for their management of waste, air, water, and energy.

In the past 15 years, our partners have saved over \$95 million and have experienced similarly impressive environmental results. For example, they have reduced their collective CO2

emissions by over 32 million metric tons, which is the equivalent to the CO2 from the energy used by 3.8 million homes for a year. The Environmental Stewardship Initiative shows the power of public-private partnerships in creating a more circular economy.

Next, let us talk reuse. Traditionally, reuse is seen in programs such as the refillable glass milk containers that my family gets at the grocery store. Nationwide, this is a policy that is still developing.

For today's purposes, I want to examine the ways we prioritize keeping materials within the circular economy by recruiting industries to our State who can use the end-of-life materials as manufacturing feedstock. In North Carolina, companies like Owens-Illinois and Ardagh use recycled glass to create new bottles. Within 30 days, the bottle that you are holding today can be back on the shelf with a new life.

This is a great example of a circular economy, and I am proud to say that the entire process from the resident placing their bottle in the recycling bin to the sortation at the material recovery facility to the glass processor to the bottle manufacturer all takes place within the State of North Carolina.

To have material to feed these businesses, though, we need to look at the last R: recycle. Recycling alone isn't a circular economy, but a circular economy can't exist without

recycling. Having a strong State recycling program, one that supports local recycling programs and coordinates regional and statewide solutions, is a key component for success.

In the early 2000s, a combination of policy changes led to significant improvements in our recycling rates. The State established a disposal surcharge, a portion of which supported grant dollars for recycling infrastructure. North Carolina also enacted a number of landfill disposal bans for readily recyclable materials, such as aluminum cans and plastic bottles, recognizing that these materials are not waste, but commodities that were needed as vital feedstock by North Carolina manufacturers.

To complement these policy changes, North Carolina led a robust economic development effort to recruit industry and strengthen market demand for recycled materials. Now, more than 15,000 North Carolinians are directly employed by the recycling sector, with a total payroll of \$759 million.

While North Carolina is making great progress, like every State, we have a way to go before we have a truly circular economy. We have a lot of work to do to decrease the amount of wasted food ending up in our landfills. According to the EPA, wasted food is the largest segment of our waste stream. The USDA estimates that 30 percent to 40 percent of our Nation's food supply is wasted each year. This waste occurs even as 13.8

million households are experiencing food insecurity. It is not just a waste problem. It is also a climate problem.

Approximately 15 percent of total US methane emissions come from landfills.

While our work is not done, I appreciate the opportunity today to share North Carolina's journey with you. With programs that encourage a source reduction of waste, a robust economic development effort to support infrastructure and businesses that reuse materials, and a strong State recycling program, we can make real progress towards creating a truly circular economy.

Thank you.

[The prepared statement of Ms. Biser follows:]

Senator Carper. Thank you so much.

Ms. Elias?

STATEMENT OF ROBERTA ELIAS, DIRECTOR, POLICY AND GOVERNMENT
AFFAIRS, WORLD WILDLIFE FUND

Ms. Elias. Thanks. Again, my name is Roberta Elias, and I am the Director of Policy and Government Affairs at World Wildlife Fund. Thank you for the invitation to join today.

Fast moving consumer goods and packaging have become a fixture in all of our lives. Unfortunately, as the quantity of non-durable items has grown, so have production impacts and the presence of waste. Governance needs to catch up with changing realities.

The Nation's solid waste management laws were enacted before disposable items became so prevalent and before we fully understood the potential of recycling. Currently, 20,000 different municipalities govern the Nation's recycling programs, all with different requirements and outcomes. This creates too much uncertainty for industry and confusion for the public.

In fact, the number one thing we have heard in conversations with industry is they want clear and consistent rules of the road. They also want assurances that there will be sufficient high-quality recycled content to deliver on promises already made to consumers. The number one thing we have heard in talking to the public, including conversations with many of you, is that the Nation's recycling system is inaccessible and way too confusing.

There are important challenges associated with production and disposal of all materials; however, I will focus the remainder of my framing remarks on plastics. This is because plastics constitute the newest and fastest-growing material type. They have also so clearly captured the attention of the American public across demographics and party affiliations and of government leaders.

Mass production of plastics began in many of our lifetimes, only about 60 years ago. In that time, 8.3 billion metric tons of plastics have been generated. The vast majority of that 8.3 billion, or 75 percent, has become waste, and if we have a big challenge now, we will have a much bigger one very soon.

Global plastic production is expected to more than triple by 2050. This growth will account for a full 20 percent of all oil consumption or 10 percent to 13 percent of the entire carbon budget. The current recycling system, which is, again, disjointed across 20,000 municipalities, functions without clear goalposts at an economic disadvantage to landfills. It simply cannot process the sheer volume of stuff.

In the United States, only 34 percent of all municipal solid waste is recycled, and only 13 percent of plastic packaging. Only 2 percent of plastic packaging eschews circularity, where an old product becomes a new one again. The remaining 87 percent of all plastic packaging, our drinks, our

snacks, the wrapping around the items shipped to our homes, is either landfilled, incinerated, or leaked into nature. Our favorite brands litter America's iconic landscapes. Eleven million metric tons of plastic enter the ocean each year, or about one dump truck per minute, 24-7, all year long.

Fortunately, there is real reason for hope. We have seen increasing information about the dramatic gains in efficiency and to conservation and health outcomes that can be achieved by shifting in use from virgin materials to recycled content.

Reduction and circularity are also good for business. The Pew Charitable Trusts estimated that the comparative costs of plastic leakage to the global economy between a business-as-usual scenario and a systems change scenario is over \$2 trillion. They also concluded that if implemented appropriately, extended producer responsibility could generate over \$12 million and save government \$70 billion.

We commend both chambers, and particularly Senators Whitehouse, Menendez, and Sullivan for the strong action already taken. It is time for the next step.

WWF and the American Beverage Association have drafted joint principles, submitted for the record, which outline key federal policy priorities. Related concepts are also supported by our OneSource Coalition, including ABA and the beverages, plus Danone, Mars, Unilever, Closed Loop Partners, the National

Recycling Coalition, and many others. Almost 900,000 WWF supporters have echoed this call for change.

The WWF and ABA principles reflect the very same concepts that you, Chairman Carper, and others have elevated many times in comments both to the EPA and at previous EPW hearings. The key concepts of the system, known as Extended Producer Responsibility, are phase-outs of truly unnecessary and problematic materials, public-private funding mechanisms, accountability, and oversight tied to circular economy objectives, and provisions to achieve public health and environmental justice goals. We also hope a national deposit return system will be included in that system.

The Break Free From Plastic Pollution Act introduced by Senator Merkley, thank you, Senator Merkley, is the high-water mark for EPR as articulated above. WWF, ABA, and many others support Break Free concepts. We hope that standalone EPR legislation will ultimately pass.

We also hope that this chamber will make the most of moving vehicles, including to secure public-private investments in infrastructure, a national deposit return system, and a virgin plastic fee, such as that articulated in Senator Whitehouse's REDUCE Act.

Thank you for your leadership in moving this conversation forward. We are happy to assist in any way that we can as the

dialogue continues.

[The prepared statement of Ms. Elias follows:]

Senator Carper. Thank you for your testimony. Thanks very much for your efforts and those of those you represent here today.

Next, we are going to hear from Brian Hawkinson. Brian, please proceed. Thank you.

STATEMENT OF BRIAN HAWKINSON, EXECUTIVE DIRECTOR, RECOVERED
FIBER, AMERICAN FOREST AND PAPER ASSOCIATION

Mr. Hawkinson. Chairman Carper, Ranking Member Capito, distinguished members of the committee, thank you very much for the opportunity to talk with you about this important issue today.

I am pleased to share some thoughts on the pulp paper and paper packaging industry's commitment to sustainable practices and share an example of an innovative technology that is increasing the use of recovered paper in manufacturing new products.

To provide some context for my remarks, I would like to tell you a little bit about the U.S. paper pulp and wood products industry. In the U.S., the industry employs approximately 950,000 men and women, operates 335 paper and paper board mills, more than 4,000 converting facilities, more than a hundred recycling facilities, manufactures nearly \$300 billion in products annually, and represents approximately 4 percent of the total US GDP.

We have long been responsible stewards of our planet's resources. AF&PA's sustainability initiative, Better Practices, Better Planet 2030, comprises one of the most extensive, quantifiable sets of sustainability goals for a U.S. manufacturing industry, and is the latest example of our

members' proactive commitment to the long-term success of our industry, our communities, and the environment.

Sustainable practices and innovative technologies are in the industry's DNA. Chairman Carper, I appreciate your recognition that about two-thirds of all the paper used in the U.S. is recycled annually. That turned out to be about 47 million tons in 2020. That is recycled to make new, sustainable paper and paper-based packaging products people use every day.

The industry aims to advance a circular value chain and continue to improve the sustainability of our products to meet evolving customer needs. This includes innovating manufacturing processes, products, and packaging and increasing utilization of recovered fiber and wood residuals in manufacturing across the industry to 50 percent by 2030.

The industry has announced approximately \$500 billion in manufacturing infrastructure investments by 2023 to continue the best use of recovered fiber in manufacturing products. That is about \$2.5 million per day, and those investments are going to enable the industry to use approximately eight million additional tons of recovered fiber in manufacturing throughout that period and going forward.

This morning, I would like to share an example of an innovative technology. Ranking Member Capito, thanks for pointing that out. It is called Juno, from one of our members,

Georgia-Pacific, and it enables them to recover paper that would otherwise go to landfills and use it to manufacture new products.

More than 10 years ago, a team at GP considered the paper that ends up in U.S. landfills and started looking for a way to capture more of that for reuse. The initial focus was on paper cups, which have traditionally been harder to recycle because of the poly lining that keeps the contents from leaking. The team was able to successfully recover paper fiber from those cups but realized there are some supply chain challenges to collecting only paper cups.

So, they expanded the scope of the project to collect more paper-based waste from fast food restaurants and amusement parks, other facilities, things like cups, napkins, food wrappers, et cetera. A pilot plant was built in Savannah, Georgia in 2013. That plant has successfully processed waste generated in all those facilities: fast food restaurants, airports, et cetera.

From there, the team designed and engineered a commercial scale unit and secured permits to build the first processing unit in Toledo, Oregon. The Toledo facility began start-up operations this past May and is currently processing waste from the region.

The Juno technology process starts with collecting waste

from those kinds of commercial resources that typically have the highest concentration of paper-based material. It is important to note that the material collected for this doesn't pull recycling away from other streams. This is waste that would otherwise be destined to a landfill or an incinerator.

The material is baled and transported and fed into the Juno processing unit. The unit is an autoclave that uses steam and pressure to sanitize the material. It is essentially the same kind of technology that is commonly used in the medical industry. The proprietary Juno process sanitizes the waste and separates the paper fiber.

The fiber recovered through the Juno process is currently being used to make paper for corrugated boxes in GP's Toledo containerboard mill and has also been made to use napkins and paper towels in other company facilities. Other recyclable materials processed are able to go back into their respective recycling markets. Anything that cannot be recycled then goes to the landfill. Based on the work so far, GP expects about 90 percent of what is processed can be diverted from landfills.

As you would expect with a new technology, the team has planned a slow start to allow for adjustments from operating a small pilot plant to a large commercial unit that will process about 100,000 tons per year. Early in the phased start-up, the diversion rate, and this is from July this year, for locally

sourced waste tripled from about 18 percent to 54 percent. These results are early estimates. They are going to be audited, but it gives you a sense for the ability for this to scale-up and perform better.

This first commercial-scale unit in Toledo is expected to be fully operational by the end of the year. Conversations are underway to licensing other units in the U.S. and globally.

Georgia-Pacific and the industry are excited about the new technology's ability to recover more paper from the waste stream and use it in manufacturing new paper and paper-based products.

Thank you very much, and I look forward to the discussion.

[The prepared statement of Mr. Hawkinson follows:]

Senator Carper. Thank you. Thanks for a very encouraging presentation. Thank you.

Next, we are going to hear from Mr. Billy Johnson. Billy, you are recognized, please.

STATEMENT OF WILLIAM "BILLY" JOHNSON, CHIEF LOBBYIST, INSTITUTE
OF SCRAP RECYCLING INDUSTRIES

Mr. Johnson. Thank you very much. Good morning, Chairman Carper and Ranking Member Capito and members of the committee.

My name is Billy Johnson, and I am the Chief Lobbyist for the Institute of Scrap Recycling Industries, or ISRI, as we are better known around Washington.

It is an honor to be before you today to discuss the important role of recycling, since recycling is an essential solution to supply our domestic and global supply chains with sustainable raw materials feedstocks that help combat climate change, conserve our natural resources, and save energy, while employing hundreds of thousands of American workers.

ISRI is the voice of the recycling industry. We promote safe, economically sustainable, and environmentally responsible recycling, with over 1,300 members domestically as well as internationally, with over 4,000 facilities in the United States. We are referred to sometimes, we could be thought of as we are the ants at the picnic. We are everywhere.

Recycling in the United States is an important economic engine and job creator. The recycling industry directly employs more than 164,000 Americans while generating over \$110 billion in economic activity. These numbers tell the story of a strong U.S. recycling industry, but not one without challenges in key

segments. To understand these challenges, it is important to first understand what makes for successful recycling.

First, successful recycling requires market demand. If there is no end market to utilize recyclable materials that are collected, they will not be recycled and used again in manufacturing, regardless of the volume of material collected. Collection without market consumption is just not recycling.

Second, successful recycling requires minimal contamination, as recyclables are products sold by specification grade with a corresponding value and marketability directly related to quality.

Recycling in the U.S. involves far more than what is placed in the blue bin or cart at the end of the driveway. The recycling infrastructure in the U.S. touches almost every part of our economy, from retail stores, office complexes, residential neighborhoods, schools, factories, and even military bases.

The vast majority of the recycled material that flows through the recycling infrastructure does so without any problems and is transformed by recyclers into clean, high quality, commodity grade products used throughout the world as a substitute for virgin materials.

Specifically, what makes the residential stream so different is that while it is subject to the same demand-driven

end markets, it is saddled with an ever-changing mix of materials on the supply side, and that material flows into the stream, whether there is a market for it or not. This sets the residential recycling infrastructure apart from commercial and industrial recycling in the U.S., and that is why it demands a unique approach.

Because of the visibility of the challenges being experienced in the residential recycling infrastructure, we have seen a growing loss of confidence in recycling on the part of the general public, which is of great concern to all of us in the recycling and manufacturing industries. I think everyone here would agree.

So, in any given year, our Country's recycling infrastructure processes more than 130 million metric tons of recyclables; however, residential recycling represents only about 20 percent of the material that works its way through that infrastructure. The other 80 percent comes from recycling of commercial and industrial materials, that tends to be cleaner.

Second, there is no one, singular solution to the challenges we are experiencing in the residential recycling infrastructure. The residential recycling chain and associated infrastructure in the U.S. is a complex system, which is driven by market demand, but saddled with a supply chain that is generally not linked to the current market conditions.

We think of it as four major pressure points in the current residential recycling infrastructure, and the first one is right before the material enters the recycling stream, when the decision is made whether to put the item in the bin and in what condition to do so. That is where education efforts can play an important role, like the RECYCLE Act.

The second pressure point is between the municipality and the materials recovery facility or MRF, where there is a need for contracting policies and procedures that provide flexibility for market fluctuations.

The third pressure point is processing, where, despite investments that are already being made, there is a need for additional upgrading of equipment and facilities.

The fourth pressure point is the point following the processing, when the recyclables enter the end market. That is where market development is needed.

At ISRI, we believe that all stakeholders must come together to develop a common understanding of the weaknesses affecting the residential recycling stream and then work together to develop a menu of solutions that need to be put into place.

Thank you for this opportunity to illustrate the complexities of the recycling systems, and I look forward to taking some of your questions.

[The prepared statement of Mr. Johnson follows:]

Senator Carper. We look forward to asking those questions. Thank you for that statement.

Senator Inhofe has another obligation that requires his attention. He has asked to go first. I am happy to do that. He will be followed by Senator Whitehouse, and then I think Senator Capito, and then onto Senator Merkley and Senator Stabenow. I will go late in the game.

Senator Inhofe, thank you.

Senator Inhofe. Thank you, Senator Carper and Senator Capito, for your courtesy.

My first question references the articles I have already made part of the record by Andrew Wheeler, and it goes to Mr. Johnson.

Mr. Johnson, I continue to be concerned about the challenges associated with recycling renewable technologies like solar panels and wind turbines. I am reminded of a Bloomberg article from last year titled Wind Turbine Blades Can't Be Recycled, So They're Piling Up in Landfills. Mr. Johnson, are you aware of any technologies that exist today that can reliably recycle solar panels or wind turbines, particularly the wind turbine blades?

Mr. Johnson. Well, first let me compliment Andy Wheeler, who was a phenomenal spokesperson for the recycling industry. He spoke at our meetings, as well as many of our friends'

meetings. What a terrific advocate for that, as well as his public service announcements for getting the cardboard back during the COVID crisis. He deserved it.

Senator Inhofe. And he endured working for me for 14 years.

Mr. Johnson. I was going to get to that, but not quite the same way.

[Laughter.]

Mr. Johnson. But to your question, at this point, those are terrific challenges. Right now, we are not able to recycle those materials.

Senator Inhofe. What is out there? How optimistic are you that something is going to work?

Mr. Johnson. Well, as I mentioned, market demand. If there is a market demand, my members figure out how to do it. We are businesspeople, and if there is a way, we will figure it out. Right now, we haven't quite figured it out. Let us just say that.

Senator Inhofe. Okay. The second question is also for Mr. Johnson. The electric vehicle batteries face similar recycling challenges. While conventional lead acid car batteries are highly recyclable, lithium-ion batteries used for EVs are very difficult to recycle.

Mr. Johnson, are you concerned that if we don't adequately

plan for and prepare for the disposal of spent electric vehicle batteries, solar panels, and wind turbines, that we are potentially creating a new superfund site? Could you characterize it that way?

Mr. Johnson. The definition of superfund site I might quibble with you, but yes, there is a very large concern with recycling electric vehicle batteries. I would first start with the safety issues. Even while fully discharged, they can be quite dangerous and harm, if not kill, the people trying to remove them from the cars.

After that, there is a number of problems with the fact that the electric vehicle batteries right now, there are four, five, six different chemistries that are not compatible with one another. So it is sort of a VHS-Betamax situation, where we are waiting for the standard of one of those to sort of win out.

In the meantime, for actually processing or recycling the batteries themselves, there is a lot of investment going into it right now to try to take care of what is coming in at this point. Cars usually last around 12 years on average, so we are starting to see some of these electric vehicles come into our facilities now. So we are trying to respond to that.

There is a lot of investment going into it, but right now, I do not believe that we have the capacity to handle it, and it is going to have to ramp up very quickly, especially with the

projections from the Administration to try to get many more electrical vehicles on the road

Senator Inhofe. Okay, Mr. Johnson. I appreciate that very much. You might separately send me a document as to where we quibble, okay?

[Laughter.]

Senator Inhofe. Thank you very much to the Chairman and the Ranking Member for giving me this time.

Senator Capito. [Presiding.] Thank you.

Senator Whitehouse?

Senator Whitehouse. Thank you very much, Chairwoman.

Ms. Elias, I would like to talk about plastic waste recycling and where we are on that. We have put considerable effort into plastic waste recycling. A great many Americans have a blue bin that they fill with recyclables to take out there. There is a lot of noise and talk about recycling, and the industry loves to talk up recycling, I think, to help create the general apprehension or the general appearance that plastic gets recycled.

But the information that I have is that on the input side, when, particularly single-use plastics are being manufactured, 98 percent or 99 percent of the input is virgin plastic, leaving less than 2 percent, maybe only 1 percent, one in a hundred, to be sourced as recycled plastic. I mean, that rounds basically

to zero.

So, when the plastics industry is manufacturing plastics products, and in this case, particularly single-use plastics, the disposable stuff, it is basically entirely new plastic going in. There is essentially no meaningful recycled contribution. So, to me, that is kind of a significant measurement.

Now, if you go to the take-up side, the so-called recycling side, the statistics I have are that less than 10 percent of what actually goes into that blue bin ever gets recycled. It may not be recyclable in the first place because there is not a very clear marking as to what plastics are and are not recyclable. It may very well just end up in a landfill, or end up on a container ship, smashed together and packed off to some place in Asia, where it ends up in a landfill there, and maybe after time, washed down creeks and into rivers, and ultimately into the sea.

At the same time that we have essentially zero recycling input into plastics manufacturing and less than 10 percent of real recycling and what we consider to be our recycling stream, we are dumping, as a world, so much plastic into the ocean that we are headed for, as the Chairman suggested, if things don't change, there is going to be more waste plastic floating around in the ocean than there are fish swimming around in the ocean, by mass.

That is just a rotten thing to do to the planet, and it is a horrible legacy for our grandchildren. It is kind of on us to do something about that, I would think.

So I would like your comment on whether you think, first of all, my facts are right, that we are essentially zero on input, that we are under 10 percent on real recycling and the rest of it is kind of performance art to stand up a relatively fake narrative that recycling is real, and at the end of the day, most of this stuff ends up in regular waste streams, and some of that is very irresponsibly done in foreign countries and ends up in oceans.

Pretty fair description, and what should we do about it?

Ms. Elias. Yes, that is absolutely a fair description, and very much --

Senator Whitehouse. Are you mic'd?

Ms. Elias. Am I mic'd now?

Senator Whitehouse. There we go, yes. You are good to go.

Ms. Elias. Is that good?

Senator Whitehouse. Yes.

Ms. Elias. Thank you. Technology is not my strong suit.

But your facts are absolutely right, and very much consistent with what we have heard in the past in conversations with various experts. Again, to reiterate, thank you so much, you and Senator Sullivan, in so many ways, started this

conversation in the Senate with Save Our Seas and Save Our Seas 2.0. Your staff has been absolutely amazing.

I think we are at a point now where we need to take that next step because of the performance part that you discussed. I think we really need a system like extended producer responsibility, as proposed in Senator Merkley's Break Free From Plastic Pollution Act.

You are right, there is so much stuff now coming into our homes, and the vast majority of it, 87 percent of our plastic packaging is either being landfilled, burned, or leaked into nature. Because of the artificially low prices on virgin plastic materials, we are just going back to the earth to create that next set of materials, and instead of having a circle, the lifespan is actually a line: taking petrochemicals from the earth, turning it into some product, using it, and disposing of it.

While any number of these materials are absolutely essential, I think about our masks, I think about our medical equipment, I think about all of the important food-grade plastics that address some of our food insecurity and food waste issues that Secretary Biser brought up, a lot of it is stuff that we don't want and we don't need, and that is being seen as a growth industry for some of our friends in the plastics industry.

We actually commissioned public opinion polling by a great firm, Corona Insights. What they heard in their conversations with people around the world, it was something like 86 percent of the public feel like there is just too much stuff coming into their lives, and it has become unavoidable. If you want to buy something, it is going to come in that packaging. You are going to put it in your blue bin, hoping that it will be recycled, hoping that it will achieve circularity, and very much knowing that it will not.

What is good about the Break Free From Plastics Pollution Act, and I hope will become a discussion topic, this is why it is supported by the American Beverage Association, similar concepts, again, by Danone, Unilever, and Mars, a number of our other friends, is it sets real standards for recyclability, recovery, and use of recycled content. And then market signals through eco-modulation to shift production and use from materials that can't be recycled, that have a big impact on the environment and on public health to materials that can feasibly be recycled and really put dollars towards the kind of innovation we need to see to make recycling actually work.

I think it is a win-win. There is broad support for it. Industry, when ABA came to us and said we want every bottle back, we want old bottles to become new bottles, I think they really meant it, and industry is willing to put dollars into the

system to have some assurances that they will have consistent, high-quality access to recycled content going forward. So when you buy your beverage, you buy your snack, you feel good about what is inside of it and what is outside of it.

Thank you for the question and thank you for your incredible leadership.

Senator Whitehouse. My time has expired, but I would just add as a chemistry note, that this stuff doesn't break down back into natural things. It just lives on as plastic indefinitely. Natural stuff breaks down into natural things, and that is part of the cycle of life. Plastic is new to this world, and it doesn't break down in the way the good Lord set up the Earth to be able to cycle things. Thank you.

Senator Carper. [Presiding.] Thank you, Sheldon. Thanks for your leadership, and that of our colleague from Alaska, very, very much. Senator Capito has graciously agreed to just yield to others that are here. I think Senator Merkley is next, followed by Senator Stabenow, and we will take it from there. Jeff, thank you.

Senator Merkley. Thank you very much, Mr. Chairman.

I was just looking at a chart put together by Eunomia to compare all 50 States and their recycling rates, and particularly looking at the plastic bottle challenge. There are four States, five actually, that have hit over 50 percent: Maine

at 78 percent, Oregon at 69, Vermont 51, California and New York at 57 percent. Then, the vast bulk of States are under 20 percent.

Ms. Biser, I was wondering about North Carolina, because of the important work you are doing in many sectors, but in this category of PET bottles, plastic bottles, 8 percent on North Carolina. It is pretty far down there.

Has North Carolina considered how to really focus on this problem of plastic bottles? I know that the expression that was in the testimony of reduce, reuse, recycle. But with plastic bottles, the truth is, it is burned, buried, or borne out to sea, all three of which create significant environmental challenges.

As we wrestle with it State by State, Oregon was the first one to have a bottle bill. I am disappointed to see that Maine has a higher recycling rate than us, but at least we are hanging in there at second, hopefully to improve. But has North Carolina considered the possibility of doing something to boost themselves from the 8 percent level to the above 50 percent level through some sort of deposit strategy or other strategy?

Ms. Biser. Thank you for that question, Senator.

There has not been any bottle deposit legislation introduced recently. North Carolina has focused on its return of PET bottles, though. We have some important industries and

some market demand in the State that is important that we find the material to feed. Unifi, which is located in Yadkin County, a rural county in our State, is a good example of that where, when we were losing textile jobs back in the 2000s, they found a way to convert PET to polyester yarn. But we need to find a way to help folks like Unifi get those bottles.

We found significant, and I am not sure about the 8 percent number you referenced, but we have found success before and actually doubled our plastic bottle recycling rate about a decade ago. Again, not nearly where it needs to be, but by investing in curbside recycling programs, market development grants, and a lot of education for our residents, but we do have a long way to go.

Senator Merkley. Well, the thing that those States that are over 50 percent and up have in common is a deposit system. So, Ms. Elias, essentially, no State has succeeded in having a significant amount of bottles recycled without a deposit system. As we look to best examples, is that kind of the best example we have or the best strategy we have right now, is to encourage recycling through a deposit?

Ms. Elias. Yes, we absolutely think that a deposit return system needs to go hand-in-glove with an EPR system. We have absolutely seen that deposit return systems provide an incredible incentive for consumers to bring that product back,

get it back into recycling system, have it presorted so that products can become a product again.

PET obviously has incredible ability to become a new product time and time again. PET only represents 7 percent of what is in the blue bin. So we are really looking for something that gets that material back, but also addresses the other 93 percent and figures out a way for it to have continued value in the system. So we would like to see both.

Senator Merkley. Great. Extended producer responsibility, I appreciate your focusing on it and highlighting it, because there are many different forms it can come in, but I think that is essential.

Mr. Hawkinson, you noted kind of the growing skepticism of consumers. This weekend, I was up in Erie, Pennsylvania, and the hotel had paper plates, and the paper plates had recyclable and renewable in big print, and then they had asterisks, and they had little tiny print. I couldn't read the tiny print, so I took a picture of it and expanded it.

I just thought about that as you were speaking, and I went back just now, and transcribed what it says. It says "recyclable and renewable" in big print. Then, it has a star by the recyclable, and it says "may be recycled if you have access to a recycler that accepts paper products containing food residue. Such facilities may not exist in your area."

Then on renewable, it has two stars, two asterisks, and under the two asterisks it says, "contains a 91 percent renewable material," and then it goes on to define renewable material as "new trees." So, it is not actually recycled content.

It is really confusing, right, because you see recyclable and renewable and you think, oh, this means they are using existing fiber that has been recycled from other products, and yay for that, and also this is going to get recycled. But then you read the details, and it is like, no, this is coming from trees, and if you have food on it, it is probably not going to get reused.

Do we need to really work at having terms or a system where people can kind of go, oh, well this product actually is recycled, or really is recyclable in most cases, and not kind of this kind of fine print, well, kind of pretend?

Mr. Hawkinson. Thank you. First of all, paper products are made from a renewable resource. That is wood fiber from trees that are infinitely renewable, or recycled fiber that has been used once before and put into the plate. So, the paper plate that said it was made from renewable fiber is made from renewable fiber, whether that is new fiber or recycled fiber. It is recyclable, depending on the collection system in the jurisdiction that you are in.

The Federal Trade Commission establishes the definitions for what marketing claims can be made around the title of recyclability. The threshold for being widely recyclable is at least 60 percent of U.S. population has access to an established --

Senator Merkley. Okay, I am going to cut you off there because my basic question is, aren't these terms confusing to people, and you are going into a long definition of yes, there are definition behind them. Great, but I have a better question for you, because my time is running out, and I want to ask a better question.

Mr. Hawkinson. Okay.

Senator Merkley. Can you come up with a paper lid to replace this plastic lid on a McDonald's cup? Because the world would bless you? And I see you have one right in front of you, so here is, how do we replace these single-use plastics with something like paper, which is so much more decomposable and recyclable than this plastic?

Mr. Hawkinson. Right. Senator, I think there are members who are working on that right now, looking for applications of innovations in manufacturing processes, different kinds of packaging that will solve some of the problems that we are faced with in other packaging substrates.

Senator Merkley. Thank you.

Mr. Chairman, I will just close by saying the problem with plastics has exploded. The plastics in the seas will soon be equal to the weight of all the fish.

The microplastics are a big problem. We are now each consuming, it is estimated, a credit card of plastic every week in our food and our air and water. That is very unhealthy, especially for our children. Of course, the chemicals that are embedded in the plastic are very unhealthy, and so we really have to focus on this plastics challenge.

Senator Carper. Amen. Okay, I think Senator Stabenow is next. Senator Stabenow, thanks for getting here early and staying late. Thanks.

Senator Stabenow. Thank you, Mr. Chairman and Ranking Member. I just want to first just add my voice to the choir in terms of addressing plastics. Plastics resins are in everything, and that is the challenge. It isn't a natural fiber, and so it is important. It has been important to our economy; it is important in many ways, but we have to get our arms around this recycling regimen.

I have to tell you, I am putting in a plug for a company. I wear shoes every day that are made from recycled plastics, Mr. Chairman. They are called Rothy's, and now I feel like I should be a salesman.

Senator Carper. What are they called?

Senator Stabenow. ROTHY's. R-O-T-H-Y, and I feel like I should be a salesperson, because I converted several women in the Senate now to be wearing them. I will be talking to our Ranking Member about this. We just need to be serious and aggressive in terms of what needs to happen.

I did want to share one other thing, too, in talking earlier about EVs. I just wanted to let you know, there is really important work being done on recycling right now. A lot of industries, a lot of companies in Michigan are doing research and development, and now are actually recycling. There is more that needs to be done.

Ford is partnering with a battery recycling startup, Redwood Materials, to reuse the raw materials from EV battery packs. They just announced it a few, actually, a couple days ago. General Motors is doing a major effort to educate the public on removing and recycling battery packs, and Nissan is reusing old batteries for automated vehicles. I know Toyota is working with folks in Michigan on taking batteries that aren't used in automobiles anymore, but using them for golf carts.

There are all kinds of ways that we are looking at, and Volkswagen is doing the same thing on recycling and creating their first recycling plant in Germany. We would love to have it in the United States. That is another discussion, but the point is, there is a lot being done, and it needs to be done.

I want to ask Mr. Hawkinson a question, because you want to talk about a success story, you are the success story. I am very excited that a lot of that success actually happens in Michigan around paper recycling, and the work that is being done and more that needs to be done.

But when we are talking about a 2020 paper recycling rate of two-thirds, basically, with more than 47 million tons of paper recovered, that is very impressive. I wish we had the same in plastics and other materials. I know that there is more that we can do to support you, and I wanted you to respond.

There is a bill I have introduced called the Protect America's Paper for Recycling, the PAPER Act, and the Chairman is a cosponsor, and Senator Boozman is a cosponsor, and others. It has good bipartisan support.

But this would stop waste to energy facilities from earning a tax credit for burning recyclable paper. We don't want that burned. We want to recycle it. We want to use it again. So could you talk more about what you are doing, but also how this legislation could help you build on that success? We have policies right now that are going against what you are trying to do, and we need to fix it.

Mr. Hawkinson. Thank you, Senator Stabenow, and thanks very much for your leadership on this issue.

Paper and paper-based packaging mills are looking for new

fiber, sourcing all that they can to make new products. A big problem is government incentives or directives that might divert recovered paper for use in things other than manufacturing.

We appreciate the work that you are doing in leadership and making sure that that doesn't happen. So, for example, someone might divert commonly recycled paper for use in combustion to generate energy, that would not count as recycling.

We think it is very important to protect the recovered fiber stream for use in manufacturing. We support the legislation; we submitted a letter of support for that. I wholeheartedly thank you for the work that you are doing on that.

Senator Stabenow. Thank you. Well, hopefully, we can get this done.

Secretary Biser, thank you for the work you are doing in North Carolina. In our bipartisan infrastructure bill that we passed, a bill of mine with Senator Portman, the RECYCLE Act, was included, as you know. And when you are talking about educating individuals as well as working with local governments and States and so on, I think this is so important.

Could you talk a little bit more about assisting local governments in recycling education efforts and how does improving these practices really reduce cross-contamination that lowers recycling rates? Right now, we have a problem if folks

aren't doing it right. So could you speak a little bit more about that?

Ms. Biser. Sure, and Senator, let me first of all thank you for your leadership on the RECYCLE Act. That is an important source of funding for States like mine to carry that message to our residents, who, poll after poll shows, are confused about how to recycle right.

What those dollars could go to help support are programs like North Carolina recently completed, where we worked with material recovery facilities within the State and mapped out what was accepted by each of those programs.

Then there are 18, we called it a MRF Shed map. There are 18 MRF Sheds within the State. Our recycling program created customized education materials for each of those MRF Sheds and worked with local governments within each of those areas to do a targeted social media campaign, and social media, but also traditional education as well. So having additional funding to do that on a more recurring basis would be very useful.

There is a lot of great traditional education methods that could be used, but there is also some innovative methods, such as cart-tagging, where folks get actual feedback on what is in their bins. It is a program that can be done, where folks walk ahead of the recycling truck, look in it, get a little tag that says, hey, oops, you may have included plastic bags, for

example. We will come back and re-collect.

I kind of compare it to, if I tell my daughter not to leave her socks out, and have her do it, versus me kind of putting it back in for her. The more we can engage our residents and how they are recycling correctly, the less contamination, and that leads to lower cost for the local recycling programs in their MRF contracts, as well.

Senator Stabenow. Thank you very much. Thank you, Mr. Chairman.

Senator Carper. Senator Stabenow, thanks very much for your leadership on these issues. It is great. We share a friend who is passionate about these issues as well. We were discussing some of this over the weekend.

Okay, Senator Capito, please.

Senator Capito. Thank you. Thank you, Mr. Chairman.

Mr. Johnson, I mentioned in my opening statement that China had changed its policy towards accepting materials from our Country. I am wondering, has the market already responded to this? What are you seeing in terms of how this is making our system more resilient, or what kind of impacts does it have?

Mr. Johnson. Yes, thank you. Yes, I think some of the commodities have already made terrific adjustments, paper being really a fine example of that. The metals industry, which is a large portion of our membership, has also been able to improve

their quality as well.

One of the things that, as it looks like, most people look at this situation and they say that China closed the door to all this material. I think it is also a wake-up call. It is a wake-up call to say that we can do a lot better with processing our materials and recycling them and reusing them here in this Country, as well as other places. So many of the commodities have already adjusted pretty well.

Senator Capito. Let me ask you another question. I am from a rural State, West Virginia. I live in the capital city. We have had recycling bins here and there, but it is unsustainable for the municipality. They just can't afford it. They don't have the manpower, but not just that, the funds to be able to transport and figure out what to do with this. I would imagine, in rural America, this is a huge problem.

What kind of solutions have you seen? Is it a hub-and-spoke kind of solution, or, Mr. Johnson, what are your members seeing? I am talking more residential, but it could be small business, small manufacturing recycling, as well.

Mr. Johnson. Yes. In the traditional way that recycling works, with metals to all the other, the commercial, industrial, as well as residential, what we would turn them into more of the scrap side of the business as feeder yards. So, what you are doing is you are collecting in lots of places, and then based on

the transportation costs, delivering it to more of a central location where you have the equipment, the machinery, the technology to be able to make it into a high-grade commodity to then be reused again.

Senator Capito. Yes. When you talk about education, I am sure you run into this in North Carolina. It is just so stop and start. Then when I heard Ms. Elias talk about deposit, I thought about when I was growing up, probably you too, Mr. Chairman, we had Coke bottles. You would have the empty ones, and you would take them back, they had value. It was just the way you did things. Then in the advent of plastics, that went by the wayside, so maybe that was a good technology. It was forward-thinking.

Mr. Hawkinson, I understand there is a burning question that my staff wanted me to ask: are pizza boxes recyclable?

Mr. Hawkinson. Yes, and thank you for asking that question. I think this is one of the remaining urban legends around paper recycling.

Pizza boxes are recyclable. We set out to put out an industry statement to try to raise awareness and eliminate confusion in the marketplace around this issue a couple of years ago. As we do with all of our issues, we gathered facts to make sure that we had the data right, and upon which to make the statement.

So, we went out to our member mills who consume the two grades most likely to have pizza boxes, old corrugated containers and mixed paper. What we found is that 93.6 percent of all of that fiber consumed at our member mills, of those grades that contained pizza boxes, are accepted for recycling in the mills. So, overwhelmingly accepted; they are widely accepted in community recycling programs. We hope that any other community recycling programs that don't currently accept them do so.

Senator Capito. Well, I think what we are going to see later this afternoon is a breaking news crawl: pizza boxes are recyclable.

[Laughter.]

Senator Carper. Would the Ranking Member yield? What if the pizza is still inside the pizza box?

[Laughter.]

Mr. Hawkinson. I am glad you brought that up, because one of the questions we asked in the research was, are there any things that preclude your ability to use these in manufacturing, and as you might imagine, pizza was the top answer, so probably the best way to think about think or remember it is: pizza boxes are recyclable, pizza is not. Pizza boxes, not pizza.

Senator Capito. Well, my pizza boxes are always empty.

Okay, so let me ask one other serious question here. You

have obviously had great success in the Forest and Paper Association with recycling with your Juno technologies and others. We have heard a lot about the plastics and the low numbers. What lessons learned from what you have been able to do and, hearing the testimony today and concerns from member, would you say could be correlated to a more efficient and successful plastics recycling?

Mr. Hawkinson. As you recognized, the paper recycling rate reached 65.7 percent in 2020. That is about double what it was in 1990, and it didn't get there by accident. It is the result of the industry's recognition that we wanted to recycle more of our products, made investments in collection infrastructure, made a commitment to recycle more. We are doing a lot of education for consumers about what is recyclable and how to recycle properly.

Importantly, we are making investments in manufacturing technology to enable us to use more recycled fiber. I mentioned a number earlier, about \$5 billion in manufacturing infrastructure used recovered fiber that is going to come online. It began in 2018 and will come online through 2023. That sort of private sector investment is enabling us to use more fiber and increase the recycling rates for our products.

Senator Capito. Yes, and I would imagine, too, it also increases, as you do that, it increases your end rate, your user

rate at the other end of the recycling life. There is somebody there to buy your product, and use it, and have it be efficient and all that, and I think that is an issue.

Thank you, Mr. Chairman

Senator Carper. Thank you, Senator Capito.

Now, while we know there is a whole suite of policy options that are available to us on this front, could each of you share, this is for the entire panel, could each of you share with us maybe the top one or two legislative actions that Congress should take within the next year or so to really move the needle and help us move toward a more circular economy?

I am going to ask Ms. Biser to go first, please. Just one or two that we just got to do items.

Ms. Biser. Thank you. One of those items, Senator, I will have to thank the committee for its work in working on infrastructure and education investment that can go down to States. Without the help of the Federal Government, we don't have the dollars available at the State level to sufficiently invest the level that we need to.

Water and wastewater infrastructure is a great example of the money that is coming to the State that we are going to be able to deploy to communities. Similarly, recycling could benefit from that investment as well.

The second thing I would say is grants and technical

assistance to help grow State programs. States really have an important role to play in helping local governments and connecting with on-the-ground actions, and the stronger the State program, the more regional and localized solutions we can develop to help support those communities who may not have the resources to address those issues otherwise.

Senator Carper. Thank you.

Ms. Elias, same question.

Ms. Elias. Thank you. This issue is so teed up at this point, and there is such a broad consensus for really making significant action across communities by industry, by the public, from Tennessee to Maine, California to Alaska. So I would go for the whole thing at this point and kind of see how far we can get.

My two things would be real policy signals to reduce truly unnecessary and problematic materials. Any system is not going to be able to handle the sheer volume of materials that are being used. The public doesn't want as many materials coming into their homes and into their lives.

The second piece is really to get the conversation going on extended producer responsibility, including a national bottle bill to get the market signals to really deliver the results that people and industry want to see and to ensure equity and parity between industries like paper that have really been

leading the charge, and other industries and really lift all boats.

It is a big job, but I really appreciate you having the conversation and continuing to move the ball forward.

Senator Carper. Thank you for being a part of that conversation.

Mr. Hawkinson?

Mr. Hawkinson. AF&PA supports the RECYCLE Act. We think that the funding, especially, that goes to EPA is important. There are a number of things that it can do. We think the most important thing is the funding that will go to States, Indian Tribes, and communities that will do things like enable them to conduct community needs assessments to understand gaps in their programs so that they can fill that, so that they can understand and adapt effective practices in the work that they are doing.

Also funding to States so that they can provide technical assistance to the communities. We think that by being able to leverage those resources, communities are going to be able to make lasting improvements in their recycling programs.

The second thing that the government can do is to stay out of the supply chains for paper manufacturing. Things like EPR, which are well-intentioned, are in place in the U.S. for things that are hard to recycle: mattresses, batteries, paint, those sorts of things.

For products like paper and paper-based packaging, the collection system is well-established and well-participated in. We have a very high recycling rate. EPR is not going to appreciably increase the recycling rate for our products. It is, however, a tax on packaging, which will cause manufacturers to divert funds to paying that tax that could otherwise go to making investments in manufacturing. And that tax is going to disproportionately affect lower-income Americans who spend a larger percentage of their funds on food and other necessities that come in paper-based packaging.

So not adopting EPR at the national level would be a great thing to do. Another great thing to do would be to not adopt higher recycled content mandates for products. Every time a paper mill makes a product, it balances the source of fiber it uses based on availability, cost, performance on the paper machine, and the finished product characteristics. Recycled content mandates force fiber from products where it is most efficiently used into products where it is less efficiently used, creating both economic and environmental negative impacts.

Senator Carper. Great. That is a lot to digest. That is good, thanks. Thanks so much.

Mr. Johnson, please. Same question, and then I am going to yield to our colleague from Alaska. Welcome, Dan.

Senator Sullivan. Thanks, Tom.

Senator Carper. Go ahead, please.

Mr. Johnson. Well, Brian stole all my stuff.

[Laughter.]

Senator Carper. Repetition is a good thing. Actually, it is. Somebody told me the other day, we don't really absorb an idea until we have heard it about 15 times, so it is still early.

Mr. Johnson. I agree with both of his, but they shouldn't count against mine, so I get to add some.

The first is, and I will add into it, is policies that would encourage market development. Market development is the demand side. That is going to pull everything through the system. That is how the market works; that is why people pay in the recycling system.

The other would be to encourage recycled content, but not mandates. We would want encouragement. It could come through all types of forms, from tax incentives, as well as just explaining to the people through the RECYCLE Act why it is so important. I would actually take you back to the World War II efforts, where we brought all of our old metal and things like that to the scrapyard to go back into being used in the war effort.

The second one would be promoting design. You need to design the products at the very, very beginning of the system in

order to make it easier to recycle, to get the better yield back out of those products, and that makes recycling much more efficient and effective.

Since you gave me the option for three, I am going to throw one more in, and that is to actually change the nomenclature and actually the regulations in treating recyclables and recycling as a solid waste and a solid waste management system. We are, I think we both said this before, that recyclables are valuable commodities. They are being used in manufacturing. This is what manufacturers have done for a long time. By treating them as solid waste, it imposes a number of burdens and costs, as well as we talk about recyclables as waste, as trash, and it is certainly just the opposite of that.

So, I would encourage the committee to look at legislation to have EPA reform the RCRA for recycling. It is an act that was written a long time ago. Making those changes, I think, would make both an appearance as well as a technical and a legal pathway towards recycling being much more efficient.

Senator Carper. Well, collectively, you have provided a great to-do list for our colleagues, and we are grateful.

Senator Sullivan, your name has been used not in vain earlier today.

Senator Sullivan. Oh, good.

Senator Carper. With some of the good work that you have

done with Senator Whitehouse and others. Please proceed.

Senator Sullivan. Thank you, Mr. Chairman, and I appreciate the witnesses here.

I do want to talk just briefly about the Save Our Seas Act and the Save Our Seas 2.0. I think that is an example of Senator Whitehouse and all of us really, working together where you get key stakeholders, a lot of you guys were critical and important in getting this over the goal line, and working on both the executive branch, the Congress, industry, key conservation and environmental groups all worked together on this. You don't get everything you want. That is just the nature of getting things done here, right?

So, I think this issue, though, is really a unifying issue. You can get Democrats and Republicans and industry and environmental groups all on board, and I think we want to keep the momentum.

Let me ask Ms. Elias and Mr. Johnson, you may have seen in the infrastructure bill, there were significant funds on the implementation of Save Our Seas 2.0 that has got a domestic international component. What would you see as important steps that we can take, kind of on the implementation side of that legislation to make sure we continue this momentum?

Ms. Elias. Thanks, Senator Sullivan, and thank you again for your leadership of Save Our Seas and Save Our Seas 2.0. I

was in the room; you had a great event with Senator Whitehouse and the Alliance to End Plastic Waste that was about to be reintroduced. Those are fantastic bills, obviously. Thank you to Mary Eileen.

There are any number of important pieces in that. I was on the phone with you a couple weeks ago with ABA and the CRS study, was it, that said the most comprehensive plastics legislation or materials legislation ever. I am not going to remember every provision that is in both of those bills, but we are very happy to see funding and full implementation going, and we will continue to keep an eye on that.

Senator Sullivan. Good, thank you.

Mr. Johnson, do you have a view at all, and maybe I am being too, I don't want to put you guys on the spot for quizzes on different sections, but just next steps in general on that? Because again, there is good momentum, and people want to see that, right? Who doesn't want to protect our oceans, clean up our oceans, keep sustainable oceans, sustainable fisheries?

These are huge issues for my State. Over 60 percent of all the seafood harvested in America comes from Alaska. We have more coastline than the rest of the lower 48 combined. So these are big issues for my constituents, but I think they are big issues for all Americans.

Mr. Johnson. Yes sir, and we fully support Save Our Seas

1.0 and 2.0, and thank you very much for doing all of that.

I completely agree with you. I would almost repeat some of the things I said to Senator Carper just now: encouraging ways for my industry to be able to recycle all that plastic, to get that plastic out of the seas, and to find uses for it. That would be a great thing.

Our members, when we get it, it is a contaminated source. So some of the improvements to technology could be great, research and development for that, as well as the markets for that material, that there is something, so instead of just pulling it out of the seas and burying it or burning it, to find some uses for it, even if they are low-level uses. That would be great.

Senator Sullivan. Good.

Let me ask, this is really for all the witnesses. In my State, it is estimated that nearly 70 percent of households do not have access to curbside recycling. Any transition to a circular economy that leaves rural America out I think is going to fail.

So, what do you recommend on how to address this issue? I have met many, many smaller communities throughout Alaska that are remote and have a difficult time accessing any of these programs. What are the best tools to increase access for recycling, particularly in remote communities? Maybe we will

start with you, Ms. Biser.

Ms. Biser. First of all, Senator Sullivan, thank you for your leadership on these issues.

Rural recycling does present challenges. We have a fair amount of rural communities in North Carolina as well; particular challenges in Alaska.

One of the things that you have to pay attention to is looking at how to make the economics of recycling work in rural communities, and one of the ways to do that is through hub-and-spoke systems. That is providing the central locations, where it may not be economical for small towns to have their own contracts for recycling pickup, but they can centralize their collection at a central place. Then it makes the economics work much better to have those types of accessibility.

There is also, I know Alaska does not have a material recovery facility in this State, which adds to the challenges, but having processing close by is also helpful. Again, with the market demand of creating the industries or attracting industries that can use that material as feedstock.

Lastly, I would say investing in curbside, after you take care of those first two, it is also just investing in the ability to bring carts to communities, making sure that they have the right education on how to use those carts in the right way, and to help create that circular economy in rural America.

Senator Sullivan. Good, that is a really good answer. Anyone else wants to address this topic?

Ms. Elias. Yes, please. I will also answer your previous question in some more detail. WWF supports and celebrates Alaska's fisheries. They are some of the absolute best-managed in the world.

As follow-up, we would love to see further action on the Ghost Pier issues that represent such an amazing threat to well-managed fisheries around the world. So that, and also U.S. accession, really have the U.S. have a seat at the table at the Basel Convention, so both really international issues.

On your second question, WWF supports a federal, flexible framework to kind of lift up all regions of the Country in the recycling space, but that system is not going to work for different areas. It needs to be flexible enough that it can be implemented where people work and live, and really bring private dollars to the table to make that collection work.

It is unrealistic to think that there will ever be enough federal dollars, and it is not, at the end of the day, necessarily a federal responsibility to make recycling work. But the good news is that the private industry really does want to invest.

We would like to see all the 20,000 municipalities that are in charge of recycling right now have some sort of additional

financial support, and real goalposts for what that system should look like. Hopefully some of those dollars would make it to the right place in Alaska and elsewhere.

Senator Sullivan. Good, great answer. Thanks. Anyone else?

Mr. Hawkinson. At AF&PA, we are big fans of public-private partnerships. We are an inaugural funder of the Recycling Partnership, which channels private funding and technical expertise into communities to help build out collection infrastructure, education, and the ability to help improve or start to improve recycling programs in those communities to put up matching funds. We think that is a great model that could be used in Alaska to improve recycling there.

Senator Sullivan. Great, thank you.

Last word.

Mr. Johnson. Yes, so the hub-and-spoke is probably a very good way. For Alaska, and some of the other large States like that, recycling is a local activity. So I think Alaska is going to need to think about how it works best for Alaska, versus how it would be best in another State. So I think it is going to be up to Alaska to figure that out for themselves in that.

One of the things I would suggest though, with the hub-and-spoke, is making, with the education through the RECYCLE Act, is to have people understand with the recycling to get a better

quality, and as that quality raises up, the value of the material increases. When the value of the material increases, the costs for running the program, as well as the transportation, then can be included in the product. That may help make the program work a lot better.

Senator Sullivan. Right, right. Thank you very much. Thank you, Mr. Chairman.

Senator Carper. Senator Sullivan, thanks for joining us today. Thanks very much for partnering with our friend Senator Whitehouse in a great effort.

Senator Sullivan. Yes. We are the Senate odd couple, but we get a lot done.

Senator Carper. We need more odd couples. I understand, over your left shoulder is Mary Eileen Manning?

Senator Sullivan. Yes, she has worked very hard on it.

Senator Carper. For the record, I just want to say I can barely see her lips move when you spoke, and I want to thank her for her good work on this, as well. Thank you.

Senator Sullivan. She does great work.

Senator Carper. I have one last question, and then we are going to wrap and go vote and go to other hearings and so forth that are taking place.

Quick question for Ms. Biser if I may. I think you mentioned that some 30, 40 percent of our Nation's food supply

is wasted, while nearly 14 million Americans, a lot of whom are kids, experience food insecurity. What actions has the State of North Carolina taken to incentivize composting and food waste reduction efforts?

Ms. Biser. Thank you for that question, Senator Carper. This is an important issue, and one that we have a way to go on.

Where we have started in North Carolina is to help support local community programs who are doing drop-offs for food waste donation. What we are seeing is that there has been great response from the residents in those communities when that option is made available. So we are currently exploring the opportunity to expand that within the State.

If I may, Senator, I may, as we are looking at how we can expand this, I might make some suggestions for how you all can help support that effort, as well. Thinking about the EPA food waste hierarchy, the number one thing to do is to prevent food waste from occurring in the first place.

Having assistance, whether it is through grants to States, for example, for providing technical assistance to large generators of food waste would be very helpful. Programs like the Environmental Stewardship Initiative could be expanded to help provide that technical assistance and reduce it to start with.

Second in that food hierarchy is feeding hungry people. As

you mentioned, nearly 14 million households that are food insecure. There are items that could help States, especially like mine that have a lot of agriculture, such as transitioning from a food donation tax deduction to a tax credit. For those who don't have a lot of margin on their income, that could be a much more effective way to incentivize food donation, and further clarifying the food donation liability through the Emerson Act.

Then lastly, organics recycling is a nascent recycling compared to things like aluminum cans or bottles or paper. So the more infrastructure and education help we can get to help support those markets, the more the Federal Government can help by supporting the purchasing of compost, for example, to help strengthen that market, all of those things would be hugely helpful as the States are looking at their approach to this important issue. Thank you.

Senator Carper. Thank you.

As we prepare to close up, I just want to thank Senator Capito myself, and everyone on this committee, the staffs as well who work really hard on this stuff. We want to thank you for really excellent testimony today. Excellent testimony, very helpful. You helped us appreciate that our waste and related climate challenges are vast, but not insurmountable.

I am passionate, as you know, a lot of us are passionate

about the promise of a circular economy to meet these challenges and allow us to have a more sustainable future. My hope, our hope, is that today's hearing will inspire and guide us all to strive together to achieve that more promising future.

I love the issue of recycling. I have loved it forever. I know you do, too. It is part of my DNA, and I know I speak for Senator Capito and Senator Boozman, who provide great leadership on these issues, along with Sheldon and Dan Sullivan and others.

But we are in a situation where we got a lot of people who are still looking for jobs. We will get a jobs report for labor, in about 10 days we will get one for the month of September. It will show how many people have found jobs, hopefully a lot, and also how many people are still looking for work, and it will be a lot.

This is just a great way, these industries, this is a great way to put people to work, including people whose skills, they don't have Master's degrees, or PhDs, in most cases. They may not even have gone to college. But they can work; they want to work, and we can put a lot of people to work here. We can strike a blow on behalf of climate change and help us address that.

We can address blight. My wife and I took a road trip. Senator Capito knows that. When we had our week off back in the recess, we just drove around about four or five States, and too

much blight, too much in Delaware and other places, as well. North Carolina looked pretty darn good if you will let me say that. But this is a great opportunity here for us just to knock the ball out of the park in so many different ways.

You have helped us, I think, move the needle and inspired us with what can actually be done here. My staff says, and my wife says that, I quote Albert Einstein way too much. Two things that Einstein said, I only know two quotes. One was the definition of insanity, you do the same thing over and over again and expect a different result, but the one I really love is, "In adversity, lies opportunity."

There is huge adversity here, huge adversity here. We see it every day as we travel through our neighborhoods and our States. We see it in our rivers and what is in our oceans. Great adversity, real opportunity, too. Opportunity to strike a blow for our planet and opportunity to put a lot of people to work, and to leave this Earth a better place for our kids and grandchildren.

That is our challenge; that is our opportunity. Thank you for helping us to realize the opportunity.

With that, I think I need to say, some housekeeping. I would ask unanimous consent to submit for the record a variety of materials that include letters from stakeholders and other materials that relate to today's hearing. Is there objection?

I don't hear any.

[The referenced information follows:]

Senator Carper. Additionally, Senators will be allowed to submit questions for the record through the close of business on Wednesday, October 6th. We will compile those questions and send them to our witnesses, and ask our witnesses to reply by Wednesday, October the 20th. Anything else, Senator Capito?

Senator Capito. No.

Senator Carper. It was good being your wingman. Thank you all very, very much, and with that, this hearing is adjourned. I think we have votes on the Floor, and I have to get to my other committee hearing before it breaks. Thank you all. We are adjourned.

[Whereupon, at 11:30 a.m., the hearing was adjourned.]