



## EXAMINING SOLUTIONS TO ADDRESS BEVERAGE CONTAINER WASTE

Thursday, September 28, 2023

United States Senate

Committee on Environment and Public Works

Subcommittee on Chemical Safety, Waste Management, Environmental  
Justice, and Regulatory Oversight

Washington, D.C.

The subcommittee met, pursuant to notice, at 9:59 a.m. in  
room 406, Dirksen Senate Office Building, the Honorable Jeff  
Merkley [chairman of the subcommittee] presiding.

Present: Senators Merkley, Mullin, Carper, Whitehouse.

STATEMENT OF THE HONORABLE JEFF MERKLEY, A UNITED STATES SENATOR  
FROM THE STATE OF OREGON

Senator Merkley. Good morning. Welcome to today's hearing here in the Chemical Safety, Waste Management, Environmental Justice, and Regulatory Oversight subcommittee on establishing a national deposit return system for beverage containers.

In my home State of Oregon, a man named Richard Chambers went out for a walk on the beach one morning in 1968. He was pretty disturbed seeing the beach littered with empty bottles. So Mr. Chambers called up his State legislator, Paul Hanneman, and brought him down to the beach to see the accumulated mess. That moment was the beginning of what became Oregon's Bottle Bill, the first statewide bottle recycling legislation in the Country.

When the bill was up for debate in the legislature in 1971, folks said that, it was pretty intensive opposition, but the legislators decided to give it a try. Thank goodness they succeeded. Thanks to that Bottle Bill in Oregon and the modifications that have been made over the years, Oregon regulatory has a bottle return between 80 and 90 percent. Most recently, in 2022, it hit an 88.5 percent redemption.

Oregon is now one of 10 States, red and blue, with a deposit return system that allows citizens to recycle used containers. But 40 out of 50 States don't have deposit return

for beverage containers. Without a deposit return system, there are much lower rates of recycling, much higher rates of litter.

Here are a few numbers. For plastic bottles, States without deposit return have a recycling rate of 17 percent versus States that do have a deposit return system at 57 percent, a 40 percent difference. For aluminum cans, the distinction is 41 percent difference, between 36 and 77 percent. For glass bottles, 44 percent difference between 22 percent and 66 percent.

So a nationwide deposit return program could have a lot of benefits. The Container Recycling Institute, represented here today by Susan Collins, one of our witnesses, estimates that a national container deposit return system could create 100,000 jobs.

Meanwhile, we spend a lot of money across the Country on litter cleanup, \$11.5 billion a year, most of it paid by businesses. So there is a potential significant savings for business and for government.

Recycling also reduces global warming gases. A national deposit return system, if it had a rate of close to 90 percent, it would save about 11.2 million tons of greenhouse gas emissions, or to translate that, that is like taking 2.4 million cars off the road.

But to do all of this, we need a lot of partnership and

cooperation. We need to dive into the complexities of the different chemicals that make up bottles, understand what the different paths are. So there is a lot of work to be done to envision a system that could work nationally. And I have noticed a lot more interest as more States have had recycling systems, as more attention is given to the challenge of plastics. Certainly, there is more consideration that perhaps a national system rather than 50 different systems might make a lot of sense. That is what we are here to explore today.

I will now turn to our Ranking Member and introduce our witnesses after his opening statement.

[The prepared statement of Senator Merkley follows:]

STATEMENT OF THE HONORABLE SENATOR MARKWAYNE MULLIN, A UNITED STATES SENATOR FROM THE STATE OF OKLAHOMA

Senator Mullin. Thank you, Mr. Chairman. Thank you to all the witnesses for attending this hearing.

Just to let you know, I am unfortunately going to have to make an opening statement and then I have to run to another hearing. I am going to try to come back but I don't know how that is going to work out, so I apologize. I do have questions that I will submit for the record before I leave, though.

But anyway, thank you so much. I mean no disrespect by having to leave. It is a little busy right now. This whole thing about a shutdown or something, I don't know what that is all about.

But I would like to start by once again thanking our witnesses here, including Steve Alexander, from the Association of Plastic Recycling. Thank you for taking the time. We appreciate your being here with us today.

As we have seen in America as well as in other countries, a one-size-fits-all Federal mandate is not always the best economical solution for everyone, especially in smaller businesses. Take Germany, for example, which everyone knows to be the poster child, along with South Korea, for recycling rates. In 2022, according to the German Brewers Association, private brewers across Germany participated in a bottle-back

program, experiencing extreme shortage of beer bottles. Not because of a lack of bottles, but because of the lack of incentives for customers to return the empty bottles due to multiple other factors.

What a lot of people don't consider is that a forced refillable incentive can result in an unintended hassle and tax on consumers, especially in rural and underserved communities. Bottle bills also have a negative impact on local municipalities, because plastic bottles are often the most valuable commodity streams that municipalities' recyclers use to fund their operations, resulting in a revenue loss and effectiveness of local curbside recycling programs.

If we push for legislation that imposes a one-size-fits-all approach, we will lose the opportunity to successfully increase America's recycling rates and harm local municipalities and rural States while doing it. One focus should be aimed at addressing accessibility, awareness, ensuring reliable, affordable availability of post-consumer material for the recycling industry in a cost-effective manner.

With that, I yield back.

[The prepared statement of Senator Mullin follows:]

Senator Merkley. Thank you very much, Senator Mullin.

Can you please go make sure we don't have a shutdown?

Thank you.

[Laughter.]

Senator Merkley. We are fortunate to be joined by three witnesses today who will share their expertise with many benefits of these systems.

We are joined by Jules Bailey, Chief Executive Office and President of the Oregon Beverage Recycling Cooperative, which operates Oregon State's beverage container recycling system.

Joining us also is Susan Collins, President of the Container Recycling Institute, which seeks to make North America a global model for the collection and recycling of packaging materials, and compiles a whole lot of statistics of use to those trying to understand the various options and their success in designing systems of re-use or recycle.

Also with us today is Steve Alexander, President and CEO of the Association of Plastic Recyclers, a trade organization whose members span the entire recycling process from design to collection and recovery to remanufacturing.

Thank you for joining us all today. We will turn first to Susan Collins.

STATEMENT OF SUSAN COLLINS, PRESIDENT, CONTAINER RECYCLING  
INSTITUTE

Ms. Collins. Thank you, Chair Merkley.

The Container Recycling Institute appreciates the opportunity to provide comments on solutions to address beverage container waste in the United States. CRI is a nonprofit organization and leading authority on the economic and environmental impacts of used beverage containers and other consumer product packaging.

I will start with an overview. The inability to effectively recycle beverage containers in most U.S. States is increasingly contributing to our plastic pollution, marine debris and climate crises. However, we know that one solution works, deposit return systems or DRS, which enable consumers to return empty bottles and cans to a redemption location and receive back the deposit they paid upon purchase.

Decades of data show that these systems are the single most effective solution to increase container recycling rates, reduce associated litter and marine debris, lower energy use, avoid greenhouse gas emissions, decrease waste collection and landfilling costs, and provide more high-quality scrap manufacturers need to make new products. A national DRS would maximize the recycling of beverage containers, support economic growth, and create new domestic manufacturing jobs.

Next, I will describe the multiple problems we are trying to solve. Sales of packaged beverages continue to grow at a rate that outpaces population growth, with the lion's share coming from bottled water. In the last 25 years, plastic water bottle sales have grown almost ten-fold from 8 billion to 86 billion per year nationwide. Meanwhile, recycling rates have remained stagnant, resulting in increasing amounts of beverage container waste, now nearly 13 million tons per year.

Containers wasted rather than recycled must be replaced with more virgin materials, which results in greater energy use and carbon emissions. Littered containers also harm our marine life and pollute our soil. As the Senator said, Keep America Beautiful has estimated litter cleanup costs at more than \$11 billion annually.

But the scrap value of beverage container materials wasted each year would be worth more than \$2 billion if we recycled them instead. The tonnage of aluminum cans alone wasted in 2019 is enough to rebuild the entire 2021 U.S. fleet of commercial aircraft 17 times over. The amount of energy required to replace the number of beverage containers wasted annually is enough to power 3 million households.

The good news is that there is a solution to these problems, and that is a national DRS. Here is how this works. When a retailer buys beverages from a distributor, a deposit is

paid to the distributor for each can or bottle purchased. The consumer then pays the deposit to the retailer when buying the beverage.

The deposit is refunded when the consumer returns the empty beverage container with options that may include a retail store or redemption center with or without reverse vending machines, or bag drop. The retailer recoups the deposit from the distributor plus an additional handling fee in most U.S. States. This helps cover the cost of handling the containers.

DRS creates a privately funded collection infrastructure for beverage containers and makes producers and consumers, rather than taxpayers, responsible for their packaging and waste. They also typically have very high redemption and recycling rates, achieving an average of 82 percent worldwide.

Among other benefits, a national deposit return system would achieve an 80 percent return rate for beverage containers, given a 10 cent deposit, cut beverage container litter in half as found by Keep American Beautiful in their national litter study in 2020, create over 80,000 new direct jobs, provide cleaner, high quality material without breakage or contamination, which often occurs in curbside systems, support domestic container material industries with more than 8 million tons of additional recyclables, save municipalities and taxpayers money, because the cost for beverage container

recycling would be shifted to beverage distributors.

A national DRS program could also support the return of refillables in the United States. And a national DRS would eliminate greenhouse gas emissions equivalent to taking nearly 2 million cars off the road.

The adoption of beverage container DRS continues to grow at a skyrocketing pace worldwide. In just the last seven years, new laws have been announced that will include nearly half a billion people in DRS systems. Lastly, the popularity of DRS in the United States was demonstrated in 2020 by a public attitude survey conducted by the Keep American Beautiful group, in which 75 percent of those surveyed indicated support of deposit laws.

Thank you, and I look forward to answering any questions.

[The prepared statement of Ms. Collins follows:]

Senator Merkley. Thank you very much, Ms. Collins.

Now we will turn to Mr. Bailey.

STATEMENT OF JULES BAILEY, PRESIDENT AND CEO, OREGON BEVERAGE  
RECYCLING COOPERATIVE

Mr. Bailey. Thank you, Senator. It is a pleasure to be with you here this morning.

My name is Jules Bailey, and I am President and CEO of the Oregon Beverage Recycling Cooperative. We are a cooperative composed of Oregon beverage distributors and we are responsible for all aspects of the Oregon program, from handling the deposits and refunds to operating redemption centers to trucking, processing, and even marketing the material.

Our vision is a world where no resource is wasted. Beverage containers aren't waste. The glass, plastic and metal materials that compose the packaging and even the containers themselves in the case of refillable bottles are resources that can be used again and again.

You can see in this excerpt from our 2022 annual report, we are pretty good at what we do. The bottom line is, we have a better redemption rate than any other system, we operate at the lowest cost per container in the United States and maybe the world, and we offer some of the most convenient return options of any program.

Last year, we turned over 2 billion glass, metal, and plastic beverage containers into grade A, high quality recyclable material, offsetting not only virgin material, but

also producing the kinds of materials that are put in the global market by Russia and China. We also run the Nation's only statewide refillable bottle program with nearly three times more bottles in circulation than the system in Paris, France.

We are not done yet. Next slide, please. We continue to expand access in our flagship. The Green Bag Account program now has over a million signups in the State with only 1.5 million households. We have more than 5,600 nonprofits signed up in our State, which received nearly \$6 million last year for organizations ranging from wildland fire fighting to preschools to homeless shelters and everything in between.

So how did it happen? Oregon, as the Senator mentioned, had the first Bottle Bill in the Nation in 1971. The legislature didn't have a road map. So instead, it set the refund value of the container and assigned responsibilities. The legislature asked the beverage distributors to figure out the rest, and over time, they did.

The term "extended producer responsibility," or EPR, has recently come into fashion. Yet while no one in 1971 would have understood that term, Oregon's Bottle Bill was really the first EPR program. We are now implementing EPR for other kinds of packaging, but that remains distinct and separate from the DRS.

The primary feature of Oregon's deposit return system is that industry is responsible for all costs and all benefits of

the program with four fundamental principles. One, industry pays for all aspects of the program and accepts no public funding. Two, industry invests unclaimed refunds above the target redemption rate into operating and improving the system. Three, industry keeps the scrap material, allowing for full material circularity. And four, no handling fee exists in Oregon, which allows OBRC to be a central system operator at scale.

We have evolved into this over 50 years, and Senator Merkley, when he was still Speaker of the House Jeff Merkley, shepherded a major set of reforms that expanded Oregon's Bottle Bill and allowed industry to coordinate as a cooperative, creating OBRC as we know it.

Ultimately, there are only two things that affect whether a Bottle Bill is successful: convenience and incentive. A system with high incentives will fail if there is no convenience, but likewise, the most convenient system in the world will fail without an incentive.

Curbside recycling is just such a system. And the highest-performing curbside systems fail to get back more than around 40 percent of beverage material and often much less. And the quality is usually lower. Even if the quality increases, without an incentive it won't be enough volume to supply the needs of the American recycling infrastructure, like the new

aluminum plants being built in the south.

So how do we do convenience? First, Oregon law created room for innovation by allowing industry to work out the details in the private market. In Oregon, government regulators act more like referees than coaches or players on the field.

Second, OBRC created a strategy for customer segmentation, allowing for return pathways that make sense for different users. We have fast, high-volume return options for those who want cash; for others, the Green Bag program means families can just place glass, plastic, and metal containers in the same bag and drop them off at a redemption center or store when they go do their shopping. You can see that here in the next slide. Most Oregonians use this method.

Still others are motivated to redeem containers for their local charity, church, or school. Third, OBRC makes it easy for you to use your money. We have an app that allows you to use Venmo, PayPal, bank to bank transfer to move your money. You can donate your balance to a nonprofit or connect it to a kid's 529 college savings plan, or even spend it for in-store credit with a 20 percent bonus.

None of these innovations were mandated. Rather, the flexible structure of Oregon's deposit return law allowed them to happen.

But at the end of the day, the most important statistic is

our customers. Do they like it? People are voting with their feet. There is a lot of info on this slide. But this is the whole system summed up in one graph. You can see a dozen years ago 90 percent of returns went directly back to large grocery stores with only a billion containers redeemed and a lot more unclaimed refunds compared to the number of containers processed.

As the refund value changed from a nickel to a dime, we expanded to cover nearly all beverage types and invested in convenience and access. Now, nearly 80 percent of returns come directly back to us and we are doing twice as much volume directly through our network with a fraction of the unclaimed refunds.

It is popular. Ninety-four percent of Oregonians are familiar with our deposit return system; 97 percent of those say it is good for Oregon. And in fact, when we look at the crosstabs, our strongest supporters are consistently older, rural, and Republican. We enjoy broad bipartisan support in the legislature and we take that responsibility to steward that goodwill very seriously.

So as you examine a national deposit return system, we should look at the principles of the Oregon model. We have had 50 years to build the program, and not every State will look the same. But the principles of government facilitation, of

regulation, empowerment of the private sector to do what it does best in service of public goals, that should be at the heart of a national system. It won't be one-size-fits-all, and we will need to allow for successful statewide systems to continue operating.

But the benefits of a national framework are large. Fewer cross-border issues, more recyclable material at higher quality to build American industry and jobs, and the opportunity to do reusable packaging at scale.

So let's make sure that in America, no resource goes to waste. Thank you.

[The prepared statement of Mr. Bailey follows:]

Senator Merkley. Thank you very much.

Now we will turn to Mr. Alexander.

STATEMENT OF STEVE ALEXANDER, PRESIDENT AND CEO, ASSOCIATION OF  
PLASTIC RECYCLERS

Mr. Alexander. Thank you, Chairman Merkley, members of the committee. My name is Steve Alexander, and I am the President and Chief Executive of the Association of Plastic Recyclers. The recyclers are excited to be here today. Thank you for giving the recyclers the opportunity to address you.

APR is the voice of plastic recyclers. We are the boots on the ground dedicated to making recycling work every day across the United States. We work at every link of the chain, from the initial design of packaging to the eventual manufacturing.

Our design guide for plastics recyclability and our testing protocols are the gold standard and referenced across the globe. They have been adopted by thousands of companies, countries, and organizations, as the technical basis to ensure that plastics packaging is designed to be recycled from the very beginning.

Our member companies take your soda bottles, your milk jugs, your yogurt containers, from every community recycling program. We wash them, we grind them, we flake them, we make pellets that we then sell to U.S. manufacturers who make them into new plastic packaging and products. Last year, our members completed this cycle countless times, recycling more than 5 billion pounds of post-consumer plastics. That is 5 billion pounds of plastic that did not end up in the ocean or in a

landfill.

Plastics recycling particularly for consumer plastics packaging works. But as we all know, it can work a lot better. The problems facing our recycling infrastructure today, however, are not just in plastics. We know that three out of every five cardboard boxes and half of the aluminum cans are thrown away by U.S. households every year.

But my focus with you today is on plastics recycling. I would like to share some numbers, if you don't mind. I will try to keep this as straightforward as I can.

Eighty percent of consumer packaging is comprised of three resins: PET, which is soda bottle resin that we are talking about here today; high density polyethylene, which are your milk jugs, your laundry detergent; and polypropylene, which is yogurt tubs, butter tubs, what have you. Eighty percent of consumer packaging are in those three forms.

Right now, we recycle those three forms in the United States at 19.8 percent. It is not very good. Interesting, our members have the capacity today, September 28th, 2023, to take that number to 42 percent tomorrow, if in fact we could get the supply. Recyclers simply cannot recycle what is not made available to recycle. So collection and supply is a huge problem facing this industry, because we have the ability to deal with it and to recycle it, even as we sit here today.

We know that recycling matters, not just to reduce waste and protect our environment, but also as the economic engine for U.S. manufacturing in building clean, resilient domestic supply chains. Demand for our products, recycled content, is soaring. U.S. companies have committed to buying three times more soda bottle resin by 2025 than is currently available in the domestic market. As a result, our members are already importing plastics from other countries to meet that demand.

Collecting more recycled plastics is good for U.S. consumers, U.S. manufacturing, and clearly benefits our environment. We need to collect more plastics from consumers, but the responsibility cannot and must not fall on consumers alone. We need robust public policies at the State and Federal level to grow and sustain recycling. Plastics recycling is a very complex, interconnected system. There is no silver bullet fix. Instead, we need a comprehensive suite of tools at every link in the chain, and our focus right now is on three main suggestions for you.

First, plastics must be designed to be recyclable. If they are not designed to be recyclable, it doesn't matter if we collect it, we sort it, we process it, it is going to contaminate the stream. It includes manufacturing adherence to design standards and implementation of very clear, consistent labeling, so we don't confuse consumers in terms of what to put

in the bin.

Second, recycling must be convenient and accessible. We need more bins at every household and business in the State. Frankly, we need to make recycling as simple as throwing away a container.

We have 9,000 recycling programs in this Country. Most of them take something different. We do a great job at confusing the consumer.

Third, new plastics packaging must be made out of recycled plastic through U.S. manufacturing. APR was the first organization to call for mandatory recycled content standards nearly 20 years ago, in 2006. We still need State and Federal policies to drive minimum recycled content standards.

Americans across the board support recycling. So long as people depend on plastics, we need a robust recycling supply chain to minimize that waste and to strengthen sustainability. Recycling is the sustainability solution for plastics packaging.

Thank you for taking the time to listen to the recyclers. I look forward to answering any of your questions.

[The prepared statement of Mr. Alexander follows:]

Senator Merkley. Thank you very much to each of you for bringing your diverse set of skills and experiences to bear here.

I want to start with you, Mr. Alexander, in kind of understanding this plastics piece better. You mentioned that there are three types of plastic that are common in food containers: PET, high-density polyethylene, and polypropylene.

Mr. Alexander. Yes, sir.

Senator Merkley. Basically corresponding to water bottles, milk jugs and yogurt cups, crudely?

Mr. Alexander. Yes.

Senator Merkley. Did you say that 80 percent of the containers fall into one of those three categories?

Mr. Alexander. Of consumer packaging, right, 80 percent of the rigid consumer packaging, not film and flexibles, the rigid consumer packaging falls into one of those three categories, yes, sir.

Senator Merkley. Is there an effective recycling path? You mentioned the wash, grind, flake, pellet path. Does that same path work for all three of these plastics?

Mr. Alexander. Yes, it does.

Senator Merkley. Can they be mixed together, or do you have to keep separate each of those streams?

Mr. Alexander. Senator, they don't like each other.

[Laughter.]

Mr. Alexander. Sorry, I don't mean to be flip. Basically each stream has to be homogeneous. Soda bottle resin, and again, it is called polyethylene terephthalate, that is one. High density polyethylene, low density polyethylene, polypropylene, there can be a little bit of mix depending on the application. You might have 5 percent mix, 10 percent mix, but again, it depends on the application.

But by and large, you need a very clean, pristine, homogeneous stream. That is why plastics need to be sorted appropriately.

Senator Merkley. So you mentioned how confused people are about what can be recycled, what can go in the bin. I experience this every single week, staring at the triangles, wondering if these triangles are accepted and so forth. So we need a simpler system.

Can you explain just briefly, ordinary folks like me just kind of go, why these three different types of plastic for these three different types of products? Does it have to do with the chemical interactions with different types of yogurt versus water versus soda? Why aren't they all made from the same type, which would make it simpler in terms of commingling the streams?

Mr. Alexander. It really has to do on the application, and the chemical composition of each of the individual resins. One,

it is really to protect the material, the contents of the container. For instance, you see a lot of milk jugs have a natural color to them. That is to protect it from light and from spoiling and things like that. Also in terms of the way that, you can't put, for instance, yogurt in the same container as a single-use water bottle. The material will spoil much more quickly. It is about preservation of the material.

It is interesting, it would be much simpler if we could do that. And it would be much less expensive for the packaging companies and the recyclers to be able to do that. But unfortunately, the protection of the product lends itself to a particular type of protective package delivery system.

Senator Merkley. That is very helpful. Thank you. More or less, it is equally simple to wash, grind, flake, and pellet each three. When you produce those pellets from these different plastics, there is a market for those. I think you are referring to how, if more was recycled, there would be a ready market for an expanded flow of plastics.

Mr. Alexander. Absolutely.

Senator Merkley. Okay. You mentioned that one of the things that could drive this is recycled content standards. What do we have currently? Are there voluntary suggestions? Do any States have a standard, or is there any national standard?

Mr. Alexander. There aren't any national standards, either

from design or recycled content mandates nationally. There is some efforts, the State of California has a recycled content mandate for beverage containers that is due to go into effect in 2025. It gets progressively more, from 25 percent to 35 percent to 50 percent. There is discussion in the State of Oregon and the State of Washington right now about developing recycled content mandates along with recycling rate mandates. We are working very closely with them.

The issue there is we need to make sure you have the supply available in order to meet those contents. For instance, in California, we did a study for them three years ago on the 25 percent recycling content rate. We told them we have enough material in our stream to get them to 25 percent. But anything beyond that, we need to collect more material. So right now, there is enough in the process to get us to 25 percent.

Senator Merkley. Okay. Thank you very much.

I am going to turn to the Chair of the committee, Senator Carper. So glad you could join us. Welcome.

Senator Carper. This is great. Now I can talk out of both sides of my mouth. How is that? That is what they let chairmen do around here.

On a serious note, welcome. Ms. Collins, you looks just like your pictures of the Senator from Maine, who is one of our revered colleagues. Have you ever met Senator Susan Collins?

Ms. Collins. I have been in her office.

Senator Carper. Did you meet her?

Ms. Collins. No, I didn't get a chance to meet her. I met with her staff.

Senator Carper. When you went into her office, did you tell her staff that you were the real Susan Collins?

Ms. Collins. I told them I was the other Susan Collins.

[Laughter.]

Senator Carper. Well, you have a good name. That is a good name around here.

We have a couple of other hearings going on, we have a bunch of new IRS nominees to help run the IRS and provide better customer service, that is going on in the Finance Committee, so I will be bouncing back and forth between here and there.

Mr. Bailey, it is nice to see you, Mr. Alexander, nice to see you as well. Mr. Chairman, thank you so much for pulling this together for what I think is a really important hearing.

I am 76 years old, I started recycling when I was a lieutenant JG in the Navy. My squadron was located in Moffett Field, California, not far from Palo Alto and Menlo Park. I learned that when I was just joining my squadron that there was a place you could recycle not far from the base. I started going there when I was just a young pup and I have never stopped. I have recycled entire vehicles, motor vehicles, like

our Ford Exploder, also known as a Ford Explorer. Recycled dehumidifiers. I like to run outside, and when I see recyclables along the trail, I stop and I pick them up and take them with me. I run by other peoples' houses, and if they have the recycling bin out, I just put it in the recycling bin.

This morning, I was on the Amtrak train coming down from Delaware, I go back and forth most days. I was in the café car getting a cup of coffee. A guy came in and he had a plastic bottle, and he was going to put it into the trash. Before he could do that, I intercepted him, I took the bottle and said, "On Amtrak, we recycle." About two feet away was the recycling bin.

So I believe in leadership by example. I know Senator Merkley and I share this passion. I am certain that you do as well.

I like to say, when I talk to people about climate change, the need to save this planet, I say, it is not just a noble thing to do, actually in terms of jobs and job creation it is the smart thing to do. With respect to recycling, not only does it give the opportunity to strike a blow against the climate crisis, but it also gives us the opportunity to create a whole lot of jobs for a whole lot of people in places throughout our Country.

With that having been said, good morning, Sheldon. We are

following each other from committee to committee. We do that fairly regularly.

Would you expand on the role of a national deposit return system and the role it could play in reducing emissions and fighting the climate crisis, please?

Ms. Collins. Thank you for that question. We talked about the greenhouse gas savings and the equivalent to taking 1.8 million cars off the road.

Senator Carper. Over what period of time?

Ms. Collins. Over each year, each year the containers would be recycled and that is the number of cars operating in that year that it would be equivalent to.

Most people don't realize how our common materials are created. There is no need for us to, we just use plastic bottles and aluminum cans and glass bottles. But a tremendous amount of material has to be mined to create those materials. It has to go through several industrial processes and then be transported, sometimes great distances, across the world. Our aluminum can come from many different countries as close as Jamaica, as far as Russia.

So all of those industrial processes, all of that transportation becomes part of the embodied energy of something like an aluminum can or glass bottle.

When we recycle, we skip the first several steps of

production. We skip all of that industrial mining and transportation and just take what has already been produced, melt it down and produce it again. That is why we save so much in greenhouse gases. Most people don't realize that there is a very big front-end burden of greenhouse gases on the manufacturing of our materials.

Senator Carper. That was a great explanation.

Mr. Alexander, we also heard from you, maybe just before I arrived, that the mechanical recycling of plastic materials as opposed to the use of new resins created through a chemical recycling process is better for our planet. Will you please share with us how your industry could help curb emissions and reduce energy consumption?

Mr. Alexander. Thank you, Senator. Recycling plastic is one of the most important things we can do to reduce greenhouse gas emissions. The energy consumption in order to use recycled plastics to remanufacture is anywhere between 75 and 80 percent of the energy, as Susan was talking about, to manufacture virgin materials.

Secondly, reusing recycled plastic to remanufacture reduces the carbon footprint by more than 70 percent. It is interesting that there have been studies that have shown that in this world of climate change, one of the most effective things that can be done by a consumer to physically participate in reducing their

own carbon footprint is to recycle their plastic. So the more material that we recycle, obviously if you think about it, we are replacing more virgin material in the marketplace, which means we are reducing greenhouse gas emissions from that initial manufacturing process that Susan just talked about as well.

So when we talk about, we need more supply so that we can recycle more of this material, so that we can replace more of the virgin material that is going into the marketplace, that by itself is a great reducer of greenhouse gas emission and carbon footprint implications.

Senator Carper. Thank you for that response.

Is your industry currently recycling plastic material at its full capacity, or would increased resources and infrastructure allow you and your industry to recycle more plastic? The second half of my question would be, would the improved ability to mechanically recycle more plastic lead to additional climate benefits? Two-part question.

Mr. Alexander. To the second part, to refer to my first answer, absolutely. The more you recycle, the more we are going to be reducing our climate impact and our greenhouse gas emissions. I indicated earlier in my statement, Senator, that right now, the three primary resin components of consumer packaging, which make up 80 percent of consumer packaging, we recycle those three components at a 19.8 percent. But we have

the capacity today to make that 42 percent.

We need more supply. It is as simple as that. So the more supply we can get, the more we can recycle, the more virgin resin we can eliminate in the marketplace. And then of course, that has the effect of reducing greenhouse gas emissions and our carbon footprint.

Senator Carper. Thanks. Thanks, Mr. Chairman.

Will there be a second round of questioning?

Senator Merkley. Absolutely. And a third and fourth. Maybe.

[Laughter.]

Senator Carper. I won't be around for the fourth.

Senator Merkley. Senator Whitehouse.

Senator Whitehouse. Thank you, Chairman, and thank you particularly for your persistent interest and concern about the plastics issue.

On plastics recycling, I try to be a good citizen. I have the recycling bins under the kitchen table. And I try to be diligent about making sure that I rinse out the bottles and put them in the bin at the right time of the week. I come down to the outside bin and dump them in the outside bin and then roll the outside bin down to the street where then the recycling truck comes to pick it all up.

I am also working with Senator Sullivan on our plastics

legislation, and we are looking at, now it will be Save Our Seas 3.0. As part of that inquiry, I am looking more into plastics recycling. What I am learning is that it really isn't happening, that the stuff that I actually take and put in my blue bin, the amount of the stuff that actually gets put in the blue bin, setting aside the stuff that gets thrown away, discarded improperly, etc., from the blue bin, the amount that actually gets recycled is in single digits. Most of it isn't recycled at all.

More and more, it makes that blue bin in my kitchen look to me like a prop that is a prop in an essentially fraudulent scheme to make American consumers think that they can buy all the plastic that they want for as long as they want, because there is a legitimate recycling end to it, making them feel better about it, and keep buying the bottles, keep buying the packaging, keep throwing it in the bins, keep thinking that it is going to be recycled. And it is not. It is a fake, more than 90 percent of the time. And consumers are the suckers in all of that, and taxpayers are the suckers in all of that, because the recycling programs that propagate this mythology of plastics recycling are paid for by taxpayers.

So I have gone from feeling good about putting my plastics away, as I have done my research, into thinking that I have basically been co-opted into a big fat scam that makes people

believe there is recycling when there really isn't. If you look at the other end, on the plastics industry side, and you look at what the plastics industry is doing to bring recycling into its products, the number that I recall is that for single-use plastics, the component of plastic input that is recycled is less than 2 percent. They are not even trying. You could probably get 2 percent by accident.

So there is really no effort. When I ask why is there really no effort, they say, well, because it is actually more expensive for us to go and find and test and have a proper supply chain for recycled plastic than it is for us just to get the new nurdles and spread more and more and more plastic into our ecosystem. It is cheaper to not use recycled plastic. So guess what? They don't use recycled plastic.

When I tried to fix that by putting a little charge on virgin plastic destined for single-use plastic products, so that it would equilibrate, so that there would be equivalency in the cost to the industry of recycled plastic and new plastic, I got virtually berserk industry opposition. Pages in newspapers with pictures of child seats and bicycle helmets saying that Congress wanted to tax your child seat and your bicycle helmet. Last I heard, child seats aren't single use. Last I heard, bicycle helmets aren't single use.

So we have this system in which the public is being fooled,

the industry is not being helpful at providing any significant recycling support, and when you try to equilibrate the economic imperatives that they follow, they fight you on it.

So that is where I think we are on recycling. I have essentially burned through all my time, but I offer any of the three of you the opportunity to respond in a response for the record. If you think I have said something that is outlandish or wrong or I have my facts not right, then feel free to let me know.

But what I am left with is that I feel like I have been the sucker in a con job and that a lot of taxpayers are paying a lot of money to prop up a completely phony or almost completely phony recycling apparatus that reaches into kitchens and garages all around the Country and has as its primary purpose misleading people about where their plastic ends up and therefore encourages them to -- guess what? -- buy more plastic.

With that, I yield.

Senator Merkley. Senator, I think it would be useful in this dialogue, when we have the time to do so, we have certainly the wish-cycling, which is a term used for putting your things in those buckets that is never going to be recycled. But in the bottle recycling, it may be a little bit of a different picture than the non-bottle world. We have experts on the bottle world. Would it be useful to have them share their insights?

I am yielding the committee's time to you.

Senator Whitehouse. Anybody who wishes to comment?

Mr. Bailey. I might jump in. Senator, as I talk to people, my friends and neighbors, a lot of them share a similar frustration to what you are expressing. There is a perception that they are unsure what is happening to the material that is going into the blue bin on the side of their house that they are pulling out to the curb. They want to recycle; they want to do the right thing. But they just don't know.

Senator Merkley, to an earlier point that you made, it is very confusing when we try to talk to busy people about recycling and tell them, you have to separate this and do that, and you have to figure this out or clean this or pull this off the top. It is hard. Frankly, with two young kids at home, I feel the pain. I am busy just trying to get dinner on the table.

But that is where deposit return systems provide a really clear economic incentive. It says, hey, this has a value associated with it. This is easily recyclable. And if you return it, you get your value back. And it is segregated from the other things. So you don't have your water bottle mixed up with your detergent bottle, even if they are the same type of plastic, all blended together, mixed in together with whatever people also throw in the blue bin, which is often recyclable or

not, depending on the wish-cycling that you brought up.

The good news is that I can guarantee you, Senator, that when a beverage container is regained through a deposit return system, and it is not just ours, I would say this is true for any of the deposit return systems across the Country, it is recycled. It is recycled and it is recycled to its highest and best use.

In Oregon, we get back nearly 90 percent of all bottles and cans sold in the State, and 100 percent of those bottles that are plastic go to a wash and flake facility in St. Helen's, Oregon, in rural Oregon.

Senator Whitehouse. So by putting a reward on return, you are able to essentially flip the numbers from 90 percent of the plastic not being recycled and just ending up in a dump someplace in the U.S. or in some foreign country or ultimately in a river, and in the ocean, to where 90 percent of it actually get claimed and used?

Mr. Bailey. That is correct, Senator. Yes.

Senator Whitehouse. Well, that is a very helpful signal about the importance of what we would call bottle bills. I can relate to you that every time I see a bottle bill turn up, the plastics and drinks industry goes berserk trying to make sure that it doesn't pass into law. So bravo getting it passed into law. I assume you had the same experience with opposition from

industry.

I will close out by saying, you can actually do this at the more corporate level as well. I was in Oslo at the Our Oceans conference when Unilever made what I thought was a very impressive commitment, which is about to go live, if I remember the timing. For every kilo of plastic that Unilever put out into the world as packaging or whatever, whatever came through them and out into the world, they would go find a kilo of plastic waste and take it back out of the world, and assure its proper disposal or recycling.

Which did something significant, and that is again, economics driving all of this, now they have to buy that stuff. So suddenly, there is a market particularly to go to poor countries where this stuff is piled up, you see these horrible photos of countries where is shin-deep along the beach, and 50 years out into the water, just a mass of floating plastic waste. Now, Unilever has an incentive to pay somebody to go out and get that stuff and bring it back to them and have a solid, we are actually cleaning up the waste supply chain, to prove out their promise. I think that can make a very big difference.

I think at the end of the day it is enormously about economic incentives. It is almost unfair to corporations to expect them to behave in a manner that is inconsistent with their economic interests. So it really is incumbent on us to

make sure that their economic interests align with the public interest. Otherwise, it is always going to be an uphill struggle and the ones who want to cheat the most will have the best economic advantage against the ones who try to be good citizens.

Thanks again for holding the hearing.

Senator Merkley. Thank you, Senator. Thank you for your work on plastics. It is so important.

Ms. Collins, let's turn to one point that Senator Whitehouse raised. When the materials are flaked and turned into pellets, so they are washed, they are ground, they are flaked and they are turned into pellets, is that material cheaper to the industry than virgin material for making new plastic bottles?

Ms. Collins. Thank you for the question. It totally depends on what is happening in the marketplace and what the price of oil is. Virgin prices go up and down dramatically. So sometimes virgin material is cheaper, sometimes recycled content is cheaper. I will add that the recycled content laws in the different States, especially I will speak to the one in California, attempts to impose an economic incentive to use recycled content by placing a 20 cent per pound penalty on material that is used that is virgin material instead.

So it is an economic mechanism to try to even out the price

differential. Sometimes, recycled content is cheaper for plastic and sometimes it is more expensive.

Senator Merkley. Thank you. Mr. Alexander, this is your world. How do we make sure that the economics work for the recycled plastic that you are noting to be greatly expanded if we had more of it?

Mr. Alexander. Thank you, Mr. Chairman. If you don't mind, I would also like to address some of the comments that Senator Whitehouse made.

I think one of the things we find in this industry, not to get too technical, this industry tends to operate on a month to month short-term purchasing basis. One of the things we have been pushing very aggressively in our market is for recyclers to be able to obtain long-term contracts with converters and consumer brand companies to use the material in their packaging.

Because in point of fact, right now we are played against the virgin market on a month to month basis, if recycled resin, the additionality of recycling the material is somehow consistent with virgin material, then we can sell it. On others, when virgin prices plummet, then they get out of the market and they go to the cheaper product.

So a lot of it is a procurement issue that we are working. That is why with long-term contracts and with mandated content requirements, if the companies have to use content, then they

know that they are going to have to use it, so then we can have a stable economic environment, we know we are going to have a market, we can price it accordingly for the longer term which then allows us to pay the supplier, the MRFs, a better price in order to make their bales of material more pristine, which reduces our operating cost, which reduces the cost of the product.

Senator Merkley. So recycled content standards and long-term contracts are critical.

Mr. Alexander. They are critical.

Senator Merkley. Thank you.

I am not going to ask you to respond to all of Senator Whitehouse's broader vision, because of the limited time, but we will have time at the end to come back to it.

I wanted to turn, starting to amplify a little bit on the details.

Senator Carper. Mr. Chairman, could I ask a favor? I have limited time to get back to the Finance Committee. If you don't mind.

Senator Merkley. Absolutely, Mr. Chairman. Please.

Senator Carper. Thanks so much.

Ms. Collins, a question, if I could, for you. In your testimony you mentioned that the deposit return systems in the U.S. currently create over 20,000 jobs, is that right?

Ms. Collins. Yes.

Senator Carper. And your organization estimates a national bottle bill could create an additional 80,000 jobs to 100,000 jobs. That is kind of a win-win situation where I come from.

Could you share with us a little more information on how deposit return systems increase employment rates and contribute to economic growth? What are some specific jobs associated with deposit return systems?

Ms. Collins. Absolutely, thank you for that question.

We conducted a study about 10 years ago where we looked very deeply at the entire process of recycling and looked industry by industry and got factors for the jobs per thousand tons of materials moved.

The number one reason that container deposit laws create more jobs is because there is more material in the recycling system. It is because instead of operating at something like 20 or 30 percent recycling rates, they are actually bringing back more material, and that material has to be handled by people doing the recycling process.

When I say the recycling process, it starts all the way from the beginning where the materials are collected and then they are transported to places like glass beneficiation facilities where the glass is cleaned up so it can be used by manufacturers, or to plastic reclaimers where they are taking

that material and turning it into plastic pellets that can then be made into bottles again.

All of those places are jobs and some of them are highly valued, highly paid manufacturing jobs. And they are domestic. They all stay here in the United States.

Those are the numbers we found. It would be an additional 80,000 jobs and those are the types of jobs that they are.

Senator Carper. Good. Thanks for that response.

Mr. Alexander, before I run, one last question for you. In EPA's draft strategy to address plastic pollution, you may have noticed that the agency affirmed that it doesn't consider activities that convert non-hazardous solid waste such as plastics into fuels to be recycling activities. That is the way they call it.

Do you agree with the statement that any process that takes plastic materials and converts it into a fuel source using incineration, pyrolysis, chemical reactions or otherwise, should not be considered recycling?

Mr. Alexander. That is correct. If it is not going back into plastics, we don't consider it recycling.

Senator Carper. Would you please explain the main difference between mechanical recycling and the process often referred to as advanced or chemical recycling, including energy use, emissions, or scalability?

Mr. Alexander. Essentially, when Susan pointed out earlier, the initial process for manufacturing the material but also the initial process for segregating and recycling the material, mechanical recycling, chemical recycling, the initial process is similar. You have to collect the material, you have to sort it, and then you have to begin to process it.

In many ways, it has to be mechanically processed for a while and then make it available, if in fact there is a chemical process for it.

Mechanical processes are exactly what we talked about. You are physically, mechanically grinding, flaking, pelletizing. The chemical process, the best I understand it, and I am not a chemist, is that you then take that material and through some combination of heat and pressure break it down to the original monomer. So you are actually breaking the material down.

That is technology that has obviously been discussed. There may be an opportunity for that because we need new technologies in order to address a lot of the plastic products that are out there.

But what we know how to do and what we are doing today is a proven recycling activity, which is mechanical recycling. Frankly, if we had more supply, we had more content requirements and we had more convenience, we can improve and reduce greenhouse gases more by just reinforcing and prioritizing what

we are already doing today.

Senator Carper. Thank you for those responses.

Mr. Chairman, before I run out of the room, I just received from my staff, I said, what percentage of our paper are we currently recycling in America? And the number, I think it was pretty high, it is about 68 percent. I think this is an EPA number.

With respect to aluminum, about 35 percent. Not as high as paper, but that is an EPA number. Is that right? That is from EPA.

We are told in 2018 EPA estimated that paper recycling , the aluminum rate was that, while for plastic, what is it, 9 percent? Yes, 9 percent. I like to say, Mr. Chairman, find out what works, do more of that. Find out what works, do more of that.

Obviously, we are doing, in the paper part, plenty of supply, if you will, for that in terms of recycling. We can do better. We have to do better than we are doing. Hopefully, part of that solution, part of the answer will come from this hearing and your leadership. Thank you all very, very much.

Senator Merkley. Thank you very much, Chairman Carper. I think that 9 percent rate may have dropped this last couple of years, if any of our experts have a sense of that. I thought it had dropped down closer to 6 percent in the last year.

Mr. Alexander. Mr. Chairman, may I address that?

Senator Merkley. Sure. Briefly, though, please.

Mr. Alexander. That is always a challenge.

The reality is that number, we hear it all the time, relative to consumer plastics packaging, that number is wrong. That takes in all plastics that are manufactured. Primarily what we are addressing here is consumer packaging. More than 50 percent of the plastic that is manufactured is not meant for consumer curbside recycling programs. You are talking medical waste, automobile parts, fiber, electronics.

You take away that half, and what we are doing is we are focusing on consumer recycling on the other essentially 50 percent. As I indicated to you earlier, 8 of every 10 of those packages in that 50 percent category of consumer packaging, we are doing that at 20 percent today. And we can get it to 42 percent.

So when you talk about that 8 percent number, frankly, it drives us recyclers batty.

The other thing I would like to say is we know, this is what we do very day, something goes in your bin, it gets recycled at a 70 percent rate. I don't know where that narrative comes from that if it goes in your bin, it is not recycled. We know. We have been doing studies. We have been doing this for 35 years. It goes in your bin; 70 percent is

going to get recycled.

Senator Merkley. Thank you for that clarification.

I want to turn to some of the details of the Oregon program, since it is one of, in our estimation, the most successful in the Country. It has gone through a number of changes.

Mr. Bailey, 20 years ago, people returned their bottles to the grocery store. Grocery stores didn't really love that very much. Now, Oregon has changed its system. Can you explain that transition?

Mr. Bailey. Absolutely, Senator. What has happened over time, and it was the graph that I showed earlier, is people have voted with their feet. They prefer an option that is more convenient. The trick is to have multiple return pathways. Under the reforms that were shepherded in the mid-2000s, we started opening redemption centers that are high capacity redemption centers.

People that want to get back their cash and return a lot of containers all at once, which there are a number of people that do that, they like going to those redemption centers better than going to a grocery store, because they can return their containers faster. We have high-volume, high-capacity machines. They get their cash more quickly. It is a better return experience overall.

We have also created what is called the Green Bag program, which is really convenient for families. Senator Whitehouse mentioned the bin he has under a sink. In my family, we have garbage, we have recycling, and then we have redemption and compost is up on the top there. Redemption is easy; we just put our Green Bag in there, we throw in all our containers mixed, we don't have to separate glass from plastic.

Then when we go to any of the drop sites, sometimes they are at a grocery store, sometimes they are at a redemption center. We just drop the bag and walk away. OBRC picks it up, processes it, credits to your account, and makes it super simple.

What we have seen is that that is the most popular option Oregonians want. The demand for that is astronomical.

Senator Merkley. I am going to pause you there and explain for folks who are watching that under this Green Bag system, and you had a picture of it up on the screen, I don't know if we can put up the person who was returning their green and a blue bag, which I will get to in a moment.

In our family, we have the Green Bag out in the garage. We throw everything that has a redemption into it, large bottles, small bottles, soda, and so forth. Then it has a quick response code that you put on the package. You go to the redemption center, you throw it through the door, and then it gets

transported to a processing center where the bags are opened, the bottles are scattered across a tray, the computer takes a picture of them, immediately recognizes what is all recyclable, and credits your account.

It is pretty much science fiction. I encourage people to visit and see it.

But you also in that picture had a Blue Bag being returned. What is the difference between a Green Bag and a Blue Bag?

Mr. Bailey. A Blue Bag indicates that that is a bag that will be automatically credited to a certified nonprofit. So if you put your containers in a Blue Bag, we have verified that is a 501(c)(3). For example, my kids' school has Blue Bags. When we go pick the kids up, they say, have you got your Blue Bag yet? They hand us one. Then when we go home, we put the containers into the Blue Bag. Then when we drop that off, the money automatically goes to that nonprofit.

We have 5,600 nonprofits in the State of Oregon registered for Blue Bags.

Senator Merkley. Habitat for Humanity, food banks, school clubs, Boy Scouts, Girl Scouts, you name it, 5,600 of them are saying, hey, you are involved in the swim club, put our QR codes on a Blue Bag and it will be a fundraiser. That provides an additional large incentive for recycling.

Mr. Bailey. That is right, Senator, and I think the really

important point here you are driving at is there are so many things that pull people into the program that care about redeeming containers. They may not care about the environment. The 10 cents might not mean a lot to them. Maybe they have other things going on. But you know what? If their local Sportsmen's Club or their kid's school puts a Blue Bag in their hand and says, will you put some containers in there, and drop it off for us? Yes, they are going to do that.

That is one of the reasons the redemption rate is so high in Oregon.

Senator Merkley. I really want to emphasize, in your testimony you talked about convenience and incentive. So the Blue Bag is another whole set of incentives that encourage recycling. It is convenient because you just throw the bag through the door, and it all happens automatically.

I wanted to turn to the incentive rate. In Oregon it is 10 cents. If we go back to the initial program in Oregon, it was 5 cents. Five cents today, we used to say it would be more than 25 cents, but now I am sure it would be higher. It was like, oh, yes, I noticed as I was in Boy Scouts at the time and we would go up and clean up the river, along the Columbia River, the beach, and suddenly all the bottles disappeared overnight. All the glass bottles that would be shattered and broken disappeared overnight.

What would that 5 cents be today?

Mr. Bailey. It feels like every year we have to do the calculation again. I think we are over 30 cents or 33 cents now.

But the change, when we went from a nickel to a dime in 2017 was remarkable. Oregon's system was struggling. Thanks to the reforms that were shepherded through the legislature, we went from a nickel to a dime in 2017 and literally overnight we went from essentially an annualized rate of about 64 percent, but it had really dropped down to about 58 percent by the time it changed, all the way up to 84 percent overnight and then continued to climb to 90 percent.

So it has made a dramatic difference.

Senator Merkley. Ms. Collins, some States have on certain types of bottles a 15 cent redemption. Are there insights that come from setting a 5 versus a 10 versus a 15? What is the magical point at which people stop and pick up bottles that someone else has left on the street?

Ms. Collins. Absolutely. We have studied this both in the United States and around the world. Here in the United States, there are three levels of deposit. There are States that are all at 5 cents, there are States that are all at 10 cents, then there are a few States that have some containers at a higher level and some containers at 5 cents.

Those different deposits, when you compile all the information together, it stacks up exactly how you would think it would. Five cents is an incentive, 10 cents is a stronger incentive. The 5 cent programs have lower redemption rates than the 10 cent programs. We see that it goes all the way up to 25 euro cents in Germany, which has one of the highest redemption rates in the world, between 95 and 100 percent.

Senator Merkley. Since we don't have a national system, if you have a State that has a 15 cent return, do you find people basically transporting bottles across State lines? Does that undermine the system or is that just an additional beneficial collection process?

Ms. Collins. It depends on your point of view. There are containers that move across the border. They are generally in the range that is less than 5 percent of the total system. So they are sort of offsetting the folks who aren't in the given State that are returning their containers. There is 10 to 15 percent of those, even in the best systems. Then there are some leakage from another State into your State.

So it is not a make or break situation, but it does occur.

Senator Merkley. Are the containers in States that are far from a deposit State, are they labeled returnable in those other States, or are they not labeled that way?

Ms. Collins. There are some containers that are labeled

differently. In the northeast, where it did get to be enough of a problem, some of the beverage manufacturers changed their labeling to make it very clear whether that container was a deposit State container or a non-deposit State container. So when it did reach a certain threshold of a problem, there was a way to address it.

But in the vast majority of cases, the containers are labeled identically, so you wouldn't know from State to State.

Senator Merkley. Mr. Bailey, let's go to some of the other economics here. How much taxpayer money goes into driving the recycling system in Oregon?

Mr. Bailey. None, Senator. We don't take any public money.

Senator Merkley. All the Republicans who are present here, and the Democrats who are present like that answer.

Mr. Bailey. It is paid for by the beverage industry, Senator. One other point I might just make very briefly on the point of the nickel to the dime change. When we went from a nickel to a dime, while I won't comment on any particular beverage seller, I can tell you in the aggregate, per capita sales did not change in Oregon.

Senator Merkley. So we do not see a disincentive to purchase because of that?

Mr. Bailey. We have not seen that in the data, Senator.

Senator Merkley. Okay, so we have talked a little bit about the different types of plastics that are in beverage bottles. Under the Oregon system, the return deposit, I am assuming there are several different types of plastic that are coming in through these Green Bags, Blue Bags, yellow bins, so on and so forth. How do you sort them out to keep these waste streams separate the way Mr. Alexander was explaining, that each one has to have a separate, if you will, wash, grind, flake, and pellet process?

Mr. Bailey. Yes, Senator. I will try to make this brief, because there is sort of an interesting longer answer here. I will see if I can condense.

Most beverage packaging is in PET. There is some HDPE in our system. There is some polypropylene and a few other things. The vast majority is in PET. Although the caps on PET are polypropylene. We urge people to leave the caps on. We recycle those as well. Please leave the cap on your container when you return it.

As long as it is all beverage containers, it is actually pretty easy to separate out the different material types. It goes baled in bulk to our sister facility, ORPET, in St. Helen's. There are different weights to the plastic, so if you run it into water, the PET will sink and the other material will float. You can skim it off. It is not very difficult to do it.

If you had to do it at scale and there were a ton of different plastic types mixed in together, it would definitely get much more difficult to do that, and you could risk other contamination.

As an example, and one of the reasons that having an industry-run program has been very powerful, is we had a beverage manufacturer, I won't say who, who came into our market wanting to sell a container that was made of a plastic type that, to use a technical term, would have screwed up the recycling of all the rest of the plastic that we had.

We went to them and we said, well, we can't stop you from selling this in the State of Oregon. But we are going to have to pull that out by hand and separate it out, and that is going to be very expensive in the system. So our fee to you to do that, to sell that in Oregon, is going to be astronomical. Do you want to sell this in the State or not?

And they said, actually, you know what, never mind. We won't sell that package in the State of Oregon, because it is not really recyclable.

Senator Merkley. So the materials or the bottles that have the deposit are mostly PET? Do you call it PET or P-E-T?

Mr. Bailey. It depends. It's potato, potato.

Senator Merkley. And high density polyethylene. So what are the percents on that? Is it like 80 percent PET?

Mr. Bailey. It is higher than that.

Senator Merkley. Those are the main two?

Mr. Bailey. Yes. It is primarily PET and HDPE. We do have some polypropylene packaging in there, but it is de minimis.

Senator Merkley. How do you get that out? The high density sinks, the PET floats, that is easy.

Mr. Bailey. Polypropylene floats as well, and we also have sorters in our wash and flake facility that use optical sorting. It is actually really cool, speaking of magic. I know how the AI works for our Green Bags; it is not magic to me anymore. But the sorters are still magic to me. They can see opacity within the different flake types, and they can shoot them off with these little air jets at really high speed and get those things sorted.

Senator Merkley. All right. So it goes down a conveyer belt and gets knocked off?

Mr. Bailey. Exactly.

Senator Merkley. So it is not a problem, is my point in this.

Mr. Bailey. Not within the beverage container world. You wouldn't want, again, to repeat, you wouldn't want non-food grade with food grade mixed together, because then you have two polymer types that are same and it would be hard to distinguish

in that sink-float, or in the polymer sorting or opacity sorting. It would look the same. But there is a big difference in the chemical composition between something that is food grade and not.

Senator Merkley. So these pellets of these different types, going back to the economics of how we drive this, is it sold then, do you sell these pellets?

Mr. Bailey. Yes. We co-own the wash and flake facility. We then sell the flake. Some of that goes into pellets through another company. We don't market the pellets directly. But we do have flake. To echo Mr. Alexander's point, we have a problem with demand. Having that pull-through of need for recycled content, of long-term contracts, that would go a long way toward making these kinds of facilities much more viable. But then they would of course need to be at scale to be supplied with as much material as they can handle.

Senator Merkley. So the key, as Mr. Alexander noted, a key piece is a recycled content standard or requirement? Is that what you need to drive the demand?

Mr. Bailey. We don't have a specific position on recycled content standards. But what we have seen is that recycled content standards have been a major motivator. To Senator Whitehouse's earlier comment about industry, it is one of the reasons we have seen industry come around to support these kinds

of programs, because they need clean supply to then meet those standards.

Senator Merkley. Okay. What do you do if you can't market it? Or do you just lower our price in order to get it out of the warehouse?

Mr. Bailey. Supply and demand. Prices are low, yes. If anybody wants to buy it, they can call me.

[Laughter.]

Senator Merkley. Very good. Ms. Collins, as we look across the landscape, I think most of the plastics we are talking about are made with fossil gas, and fracking has made fossil gas a lot cheaper. Are we in a situation where that has made it difficult to sell from the different systems around the Country, difficult to get rid of the recycled material?

Ms. Collins. Again, there is a difference between food grade material and non-food grade material. So historically, the materials, specifically plastics, specifically PET plastic through bottle bills, has always experienced a stronger position in the marketplace. It is very high quality, food grade material.

So when there have been times historically where it was hard to sell material, it was easier to sell the bottle bill material. It was the curbside, lower grade material that had to wait longer to find a home.

Senator Merkley. We used to ship a lot of bulk plastic waste to China. That ended. China said no, we are not taking this anymore. Do we ship anything out of the Country now, or does it all stay here? I know this is broader than consumer plastics or food plastics.

Mr. Bailey. Senator, I will let the others speak more broadly. I will just say, for the systems we run, no material is shipped out. Most of the material is recycled within the State. Certainly when you include the aluminum, it is all recycled domestically.

Mr. Alexander. Senator, exported material has been going down since 2005. Most of the markets have escalated for the demand, and then obviously with the China sort in 2017 and 2018, the infrastructure has essentially absorbed most of that material. As I indicated in my testimony, we are importing material to try and meet the demand for recycled content, both food and non-food grade applications.

Senator Merkley. Mr. Alexander, is it a challenge to make sure that the imported material is actually what you think it is?

Mr. Alexander. The challenge arises as to whether or not, and we have certificates of origin. First of all, food grade material, to sell food grade material in this Country, you have to through an FDA letter of non-objection. So you have to have

an LNO to sell that material. It is a very elaborate, exhaustive, demanding process. If a company has that, as Susan indicated, and Jules said, they are the gold standard. They are the highest priced in the marketplace.

Beyond that, the other applications that can be utilized as barrier labels fill our other products with PET in it, what we are concerned about is basically from consumer applications. We have certificates of origin that we use so our members pretty much know that the material is coming from a consumer application, regardless of where it comes from.

We do have some problem with some countries in terms of authenticity of certification. You might be able to guess who some of those are. But by and large, where we get our material from, we pretty much are confident that we know it is coming from a consumer application.

Senator Merkley. My colleague mentioned one concern about establishing a deposit program. He mentioned that plastic has value in the trash stream or the waste stream, and that that is currently sold and it is a source of funding. And as a deposit system, basically undermining the economics of the waste stream. Ms. Collins, can you address that?

Ms. Collins. Sure. What is important in answering a question like that is to make sure that you are looking at the whole issue, and not just a very narrow piece of it. The whole

issue is the entire process of what a municipality or taxpayers pay for in terms of recycling.

At the narrow point of just having a recycling facility that is selling that material, the PET plastic is valuable to them, the aluminum is valuable to them, and the glass oftentimes has a negative value because of the way that it has been broken and contaminated through the curbside recycling system.

But when you go more broadly and ask a different question, which is, what is this municipality experiencing in terms of their total recycling cost, when container deposit systems are established, they save money. They don't have to pay for the landfilling of most of the material that is being landfilled and not recycled at all. They don't have to pay for the collection and processing. They have lower litter collection costs, because these container deposit programs solve so many different problems for them.

This has been confirmed in literally more than two dozen studies around the world.

Senator Merkley. Over the last 10 years, how many additional States have adopted a deposit program?

Ms. Collins. The last container deposit program entirely that was established in the United States was in the State of Hawaii in 2005. But there have been probably maybe 10 different updates to container deposit laws, updates and expansions, in

the States that do have them in the U.S.

Senator Merkley. Washington State is considering a program. Are other States on the verge of potentially establishing a deposit program?

Ms. Collins. Consistently since 2019, we have seen nine or ten States every year seriously consider these laws through having hearings in their legislatures.

Senator Merkley. I am going to wrap up with this question to you all, which is just a bit of a story. Back when I was an intern here in 1976, that is a long time ago, Senator Hatfield presented a national bottle bill proposal on the Floor of the Senate. I went over to sit in on his speech.

When he was done, and he lost the vote, both Senator Packwood and Senator Hatfield proposed a study at the same time. Only Senator Hatfield had arranged to be called on, to the chagrin of Senator Packwood from Oregon. We had a softball game that night. I can tell you, there was a lot of tension between the two Oregon teams over that.

But the point here is that there has been a conversation now for over half a century over whether a national structure makes sense. My colleague and co-chair, Ranking Member Senator Mullin pointed out, different States may have different models that make sense. Different cultures are established, different consumer preferences.

Is there a pathway for a national framework that would have some guidelines but also leave some flexibility to the States that could accomplish the goal that I heard from all of you of greatly expanding recycling with its various values of job creation, waste reduction, greenhouse gas reduction, and so forth? Do you have a vision of how we might create a national framework that makes sense? Do any of you want to weigh in on that?

Mr. Bailey. I will jump in on that really quickly, Senator. I am sure there are other comments here. Other than the fact that Oregon just joined the Big Ten, there is not a whole lot of similarity between Oregon and Iowa, right? At least you wouldn't think so on the surface. Similarly, my wife's family is from Massachusetts, and sometimes I think they speak a foreign language. I call it like I see it.

I think there are a lot of differences in various States. But what we have seen is that deposit return programs have worked in a lot of these different kinds of places around the Country. I would actually take Ranking Member Mullin's point around one-size-fits-all. I wouldn't think that a one-size-fits-all program would work in the United States.

But to set a north star, to set a standard that says, here is what successful programs look like, and then to allow for State-based innovation and private sector innovation, I think

has a lot of power and a lot of opportunity to eliminate some of the cross-border issues that we talked about, to generate more supply, to overcome some of the barriers that can crop up at the local level.

That is, I think, an appropriate place for Federal policy to examine how we have a system that is flexible and can meet the needs of different constituencies.

Ms. Collins. I could just add that that is exactly how it has played out in Canada, with all of their provinces, in Australia, with their different states, and in the European Union through the European Union Directive.

Senator Merkley. And by play out, you mean that some countries in Europe had a program, but then it expanded in a broader vision. Did they use a few basic standards and then each country in Europe is flexible within that? Same question about Canada and any additional insights from those two structures.

Ms. Collins. Yes. They have all evolved in different ways. I will use the European Union as an example. They had many countries that already had a deposit system in place ahead of time. Then they passed a single-use plastics directive, which mandated a 90 percent return rate for plastic bottles. They have until 2030 or 2029 to do that.

One by one, the different countries that don't already have

a system have been implementing new systems. So we anticipate that they will all come online by 2030. But they have done it in their own individual way in each country.

Senator Merkley. Again, state that basic requirements that drove that.

Ms. Collins. The most important one is just that they want a 90 percent collection rate for plastic bottles. That alone, that one sentence --

Senator Merkley. Plastic beverage bottles?

Ms. Collins. Yes, thank you.

Senator Merkley. And Mr. Alexander, at one time, the bottling world was deeply opposed to deposit systems. That was certainly true when Oregon originated this. I have started to hear little bits of feelings like, oh, maybe we are interested in a nationwide system with some parameters as interest grows about the amount of plastic waste that goes into landfills or ends up in rivers, ends up in the ocean and so forth.

Do you see kind of a shifting attitude and a possibility of creating a national framework?

Mr. Alexander. Absolutely. We have experienced the same thing, particularly from the beverage industry who are now working very closely with us. They need supply. I think that as Jules pointed out, in terms of his testimony, that is a phenomenal program, and the incentives they have. We have

learned a lot over the last 35 years in this endeavor.

But it also points out that each State is its own marketplace. Vic Horton in Maine needs something different than Jules needs in Oregon or Amaya might need in Texas.

But I think a national framework is certainly something we need to supply. It is as simple as that.

Senator Merkley. I picture things like the Green Bag, the Blue Bag, as the kind of details that States might pursue on their own, flexibility. But if we are thinking about basic provisions that would drive a national system, what do you see as what those basic provisions would be? Would it be setting a minimum return deposit and saying this should apply to all of a certain class of beverage bottles? Or how would you, if you were at the whiteboard saying, hey, this would work, how would you design that?

Mr. Alexander. One of the things we would make sure is it is not just soda bottles, but it is also water bottles. We have worked to expand existing deposit legislation over the years to include water bottles, because they have exploded over the years.

I think that is really what we would focus on, is making sure you can bring in one class. Unfortunately, with the diversity of resin, you want to make sure you are getting one class, a homogeneous class of material through that. So you

don't have the contamination levels and things like that, and you begin to create the highest value in the secondary market of the material.

What we would think it should be focused on is one class of container, be it a PET container or something along those lines.

Senator Merkley. You are suggesting, rather than having, the deposit system in Oregon covers basically, based on what is in the bottle, but it doesn't say it has to be just PET or HDPE. Are you saying it would be better to focus just on, say, PET bottles?

Mr. Alexander. It is the most iconic package out there, and it is the easiest for the consumer to understand. That would drive, we think, the greatest consumer participation.

Senator Merkley. So if we were to say each State needs to have a recycling system for beverages that focuses on PET containers, and at a certain minimum deposit rate, those States could then expand on that, they could expand on the Oregon model, deciding how do you return them, do you return them to a recycling center, do you return them to the store, do they raise the rates higher to do that, do they include other types of plastic once they have the system set up, with more flexibility. But if we were to start with a basic national system, you would be recommending a minimum deposit rate and just PET bottles?

Mr. Alexander. Well, again, I really would have to think

about that, to be honest. I am hesitant to say, again, that Maine would be able to handle that, given the rural nature versus what Jules is able to do in the area of, let's say the metropolitan area of Portland in Oregon.

It sounds like a great idea. To be honest with you, I think some basic framework is important. Whether or not something as specific as that, frankly, I would have to take a look at it, to be honest.

Senator Merkley. Mr. Alexander, I will just ask if you will continue to use your expertise in the plastics world to help us figure out what the basics of a national framework would be. That would be very helpful.

Mr. Alexander. We appreciate the opportunity and we will take advantage of that. Thank you very much, sir.

Senator Merkley. Thank you. Mr. Bailey?

Mr. Bailey. Senator, if I might just color one little bit of testimony here, from the perspective of somebody who operates this every day for customers that come in the door. It is really challenging to tell a customer that one bottle, because it is one material and another bottle that looks the same but might be a slightly different material, one is redeemable and one is not. That is really confusing to people. The most disappointed customer is the customer who leaves with bottles that they brought in to redeem.

So I think making sure that we also have a system that is easily understandable for Americans, for customers that come in, and that really covers a broad range of all of the glass, plastic, and metal bottles that are out there as broadly as possible is not only good for supply and for the environment, but it is better for customers.

Senator Merkley. So, make it as little confusing as possible, clear labeling, clear definitions. I will ask, or challenge you to do the same thing, which is to lay out the basics of a national architecture might look like that leaves a lot of flexibility to individual States, so that we can start wrestling with and have that conversation with our national producers, and see if there is a pathway. Would you do your whiteboard exercise and get it back to us?

Mr. Bailey. Yes, Senator. Just very briefly, I think you assign the refund value, I don't know that you even need to mandate the deposit, but you assign the refund value, you assign the responsible parties, and you assign a target. Then from there, you let it play out. That I think is really the most basic system that you can have.

Senator Merkley. Write that up and provide it to us.  
Thank you.

Ms. Collins, same exercise. Can you go through that with your insights?

Ms. Collins. I have it written down.

Senator Merkley. Okay, great.

I want to thank you all very much for participating in the conversation. I think how we handle our containers is a significant part of the issue of waste and environmental improvement and energy savings. It is a win on many levels, job creation, as you have all pointed out.

So I look forward to your insights as we work to try to create a conversation here half a century after Senator Hatfield worked at that same conversation. I know that there are a number of my colleagues across the aisle who really have started to see the impact of plastics, especially those ocean States, and would like to ponder if there is a framework that could make sense, that is good policy and perhaps good politics.

In closing, thank you all for appearing today and sharing your perspectives.

Some housekeeping, I ask unanimous consent to submit for the record a variety of articles and materials that include letters from stakeholders and other materials that relate to today's hearing. Hearing no objection, so ordered.

[The referenced information follows:]

Senator Merkley. Additionally, Senators will be allowed to submit written questions for the record through the close of business on Thursday, October 12th. We will compile those questions, send them out to our witnesses. We will ask for you to get replies back by October 26th.

With that, the hearing is adjourned.

[Whereupon, at 11:38 a.m., the hearing was adjourned.]