

Testimony of Eric Hartz

Co-founder and President, Nexus Circular

Before the Senate Committee on Environment and Public Works

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

“Examining the Impact of Plastic Use and Identifying Solutions for Reducing Plastic Waste”

December 15, 2023

Good morning, Chairman Merkley, Ranking Member Wicker and Members of the Subcommittee. My name is Eric Hartz. I am Co-founder and President of Nexus Circular. We are an advanced recycler that transforms used plastics for reuse with the objective of reducing plastic waste.

While there are a variety of companies that process used plastics, Nexus Circular is unique, and I am here to discuss what Nexus does, and appropriately, what it does not. I appreciate the opportunity to provide information to subcommittee members regarding our real, proven solution to the challenge of used plastics.

Nexus Circular is a commercial scale solution, today, that handles a wide array of plastics, including hard-to-recycle film that most recyclers cannot. We convert these plastics in one single heating & cooling cycle to produce products that our partners can convert into virgin-equivalent plastics using the same equipment they use to produce plastics today. Nexus Circular does this without chemicals, catalysts, water, special treatments, or burning.

Since our founding by Jeff Gold, our team has been laser focused on taking used plastics and turning them into circular products safely, economically and with the ability to scale in a way that has a positive impact on the environment and the communities we serve.

We have an experienced, passionate team that is literate in chemistry, operations, engineering, logistics, safety, and finance. Our philosophy from the start has always been: if our technology is not economical, environmentally friendly and scalable, then it will fail to provide the solution to the plastics challenge, we all seek.

Our solution is simple pyrolysis. We heat used plastics in the absence of oxygen, breaking down those plastics into circular materials that can be used to make brand new recycled plastics. Repeatedly.

A few details:

- The used plastics we accept are not waste. They are materials that have been segregated from the waste stream and often bound for landfills. There are no odor issues where we operate. We do some light sorting for suitability. Almost all the used plastics we process meet the ISO 14021 definition of post-consumer plastics. We cover a broad array of plastics: polyethylene, polypropylene, polystyrene and, as mentioned, an expertise in handling hard-to-recycle films.
- We heat the used plastics in the absence of oxygen at 580-750F (300-400 C). At this temperature, the plastics not only melt but depolymerize – break down at the molecular level – turning into vapors that are then cooled into circular liquids. These liquids are then made into new virgin-equivalent plastics by our partners. It's also why Advanced Recycling is referred to as Molecular Recycling. Because we recycle at the molecular level, these plastics can go through this process again and again, indefinitely. Our products and those of our partners represent a true circular plastics economy.
- There is no burning, gasification, nor incineration which all occur in the presence of oxygen and at much higher temperatures of 1,800 to 2,700 F (980 to 1,500 C). Some mistakenly equate advanced recycling to incineration. Besides being 3-4 times hotter, incineration requires oxygen, whereas our process has none. Actually, our process would fail with oxygen present, since it would not yield sellable circular outputs.
- The only by-products are small amounts of non-condensable gases (about 10%-15%) converted to heat or electricity for use in our system. There is also char (about 4-5%) generated from cellulosic and other types of contamination, like labels or fillers, which have other applications or can be safely landfilled.
- Our Atlanta facility operates in compliance with all federal and state laws in an industrial park in Fulton County GA, a Clean Air Act non-attainment area, under the purview of the EPA at the federal level and permits from the State of Georgia. We and our partners are ISCC Plus certified and follow audit procedures ensuring all materials are recycled. Our operating footprint is small, so we can site our facilities in similar areas across the nation.
- Advanced Recycling compliments Mechanical Recycling, it does not compete. The Recycling hierarchy remains the same – Re-Use, Re-Purpose, Mechanically Recycle (which is melting and reforming of plastics), Advance Recycle (which is recycling at the molecular level) and, if necessary, landfill. Further, this is not an Either/Or solution, it is Both/And, meaning our approach supports both converting used plastics into new ones and finding ways to reduce plastics, where merited.

The demand for Nexus Circular's output far outstrips supply because plastics producers have set ambitious recycled-content goals to meet the demand of their own customers who, ultimately down the

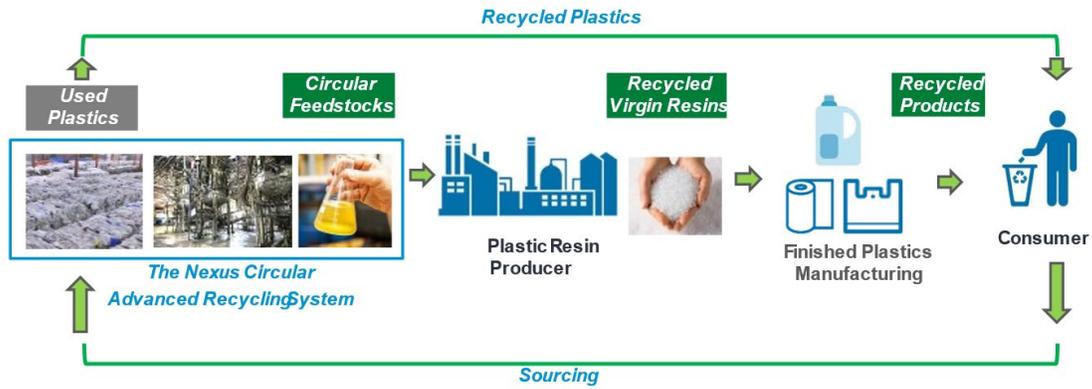
line, make end products for consumers. We are proud to provide all of them an environmentally friendly, job-creating approach while concurrently addressing the plastics challenge that impacts us all.

In short, our advanced, molecular recycling process is an elegant solution to a seemingly intractable problem.

But please don't just take my word. We cordially invite all of you, any time, to visit our commercial-scale operation in Atlanta – just 20 minutes from the airport or downtown. Once you see first-hand what we are doing, how we are doing it, and most importantly how it differs from what some think, we believe it will clear up any confusion about our approach. Better yet, we expect it will generate true excitement about the potential of providing a real solution to addressing the used plastics problem.

I appreciate this opportunity to share our on-the-ground experience, and I look forward to your questions and comments.

Advanced Recycling Supports Existing Value Chain Creating Circular Plastics

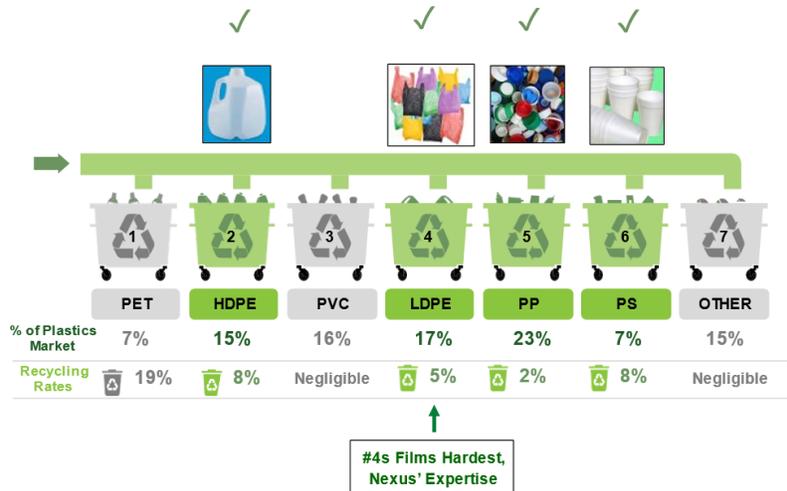


Source : Nexus Circular

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Plastics Best Suited for Advanced Recycling

Nexus Circular is Specifically Designed to Utilize Abundant and Hard -to-Recycle Plastics, such as Films



Source: National Geographic, Plant of Plasti2018, Nexus Circular

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