

# Collaborative action can make compostability a reality easier, faster than you think

Thermoformed sustainable food packaging

A broad coalition bringing together stakeholders, members of the entire value chain and end users is essential in order to effectively influence the regulatory framework to increase compostability to a level where it will have an impact and contribute to solving the plastic waste problem, writes **Max Senechal**, EVP and chief commercial officer for CJ Biomaterials.

**T**he damage plastic pollution causes to our planet is well documented, and people and organisations around the world - from regulatory agencies and NGOs to resin man-

ufacturers, composters, converters and consumer products companies - are working to address this challenge with a wide range of innovative solutions. Each has an important role to play in developing and




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implementing the policies and technologies that will help us get where we need to go. What has become apparent is that there is no panacea. No one technology or approach will successfully address a problem

of this magnitude and complexity. Despite our valiant efforts, our landfills continue to be the end-of-life destination for many plastic materials and every day we learn more about how they negatively affect climate change. We know we need more and smarter solutions to help us achieve our goals.

In the United States, California's Plastic Pollution Prevention and Packaging Producer Responsibility Act, known as Senate Bill 54, was developed in recognition of the multiple approaches required to achieve our goals. SB-54 addresses the fact that consumers cannot be relied upon to solve the problem and focuses on shifting the responsibility to the pro-

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Dome lid cup from sustainable plastic



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ducers. It further focuses on companies that sell single-use packaging and food packaging and foodservice ware – two of our largest and most-difficult-to-manage sources of plastics pollution. It makes sense to recycle materials that are easily and readily recyclable. However, when it comes to single-use, disposable articles such as picnic plates or sushi trays crafted from hard-to-recycle resins

or those that have come into contact or are mixed with food waste, rendering them unrecyclable, composting is the perfect option.

SB-54 starts with reduction and recycling goals and ultimately sets a goal that 100% of single-use packaging sold in the state be recycled or composted by 2032 – and it puts the onus of compliance on the companies that sell these products via its extended producer

responsibility (EPR) program.

Including compostability in this new law is an important step. It recognizes the advantages of this approach as a true end-of-life solution and in driving a circular economy.

Home compostability is particularly attractive because it provides an additional and convenient option to the consumer for returning these manufactured materials to nature without the use of industrial

collection and processes. Increasingly, we are developing and perfecting the technology to make products that are both home and industrially compostable, but as with other plastic waste management approaches, there are impediments – both economic and regulatory that will slow our progress. Overcoming these impediments will require a collaborative effort by every stakeholder to make us a success.

### Moving toward a compostable future

For nearly two decades, an industry has developed that is focused on enabling compostability. CJ Biomaterials has been a part of that. We worked to develop our polyhydroxyalkanoate (PHA) biopolymers, while other resin manufacturers were focused on creating their own competitive technologies. Today, there are technological solutions to making home and industrial compostable products.

As our industry has grown, collaboration has developed amongst resin manufacturers and together we have extended the applicability and performance of these technologies. This collaboration was a big step in our journey because, for the first decade of our existence, we were all startups that were competing for funds and attention and trying to demonstrate how our technology was better than others.

After the technology was established, we started to see collaboration between resin manufacturers and compounders to expand uses and implementations for plastic alternatives. Then that collaboration further extended to the converters that were making the materials.

With these pieces in place, the collaboration extended to brand owners – the people who imagine, design and market consumer products. Brands are incredibly eager to offer their consumers sustainable, responsible products. New products with enhanced environmental properties are making their way to the market right now via what we can call 'linear collaboration,' with one step of

the value chain partnering with the next. However, if we are going to meet our goals, this process needs to rapidly – and economically – expand to encompass the entire value chain working together.

## Challenges facing compostability

It is important to note at the outset that the move toward composting is not being looked at as a replacement for the 3Rs – reduce, reuse, recycle – but instead is meant to supplement that effort by providing an additional tool in the toolbox, particularly in organic (food) waste management. This presents a huge opportunity to dramatically reduce reliance on landfills that currently capture the food waste and to cut the resultant methane emissions.

Probably the single greatest challenge our industry faces today is the fact that bioplastics being considered an acceptable, compostable material are under threat because there is a lack of cohesive or coherent regulation, systems and infrastructure that allow consumers and composters – the other end of the value chain – to effectively process these items. Environmentally conscious consumers have good intentions and are trying to do their part, but when it comes to composting products they have used, they are confused about which are compostable and what to look for when they want to buy compostable products.

Meanwhile, when compostable materials reach companies engaged in the business of composting, it arrives as part of a mixed-up assortment of plastics and other non-compostable materials, leaving them to separate the stream. They literally face the situation of ‘garbage in, garbage out.’ This has led some composters to stop accepting compostable bioplastics because they cannot afford this process.

The challenges composters are facing reverberate through the entire value chain – to the material producers and finally the brands that must tell consumers they are going to have to

throw their compostable products in the trash because there is no way to dispose of them.

It's true that many of these products are biodegradable, but if they end up in the trash, their final destination will be a landfill, and practically nothing biodegrades there. The lack of oxygen will prevent biodegradation. What does degrade is anaerobic and will emit methane into the atmosphere. Landfills are the third-largest source of methane emissions in the world, and one of the industry's goals is to divert materials from landfills to composting sites to reduce methane emissions.<sup>1</sup>

## Driving regulatory support through collaboration

To address these challenges, we need to pursue smart policies that support a transition to compostable plastic materials, and governments are actively considering such policies. An ordinance introduced by the City of Irvine, California, in late 2023 is a recent example. The ordinance focused on reduction of plastic waste and ocean plastic proliferation, and it was written to limit or prohibit the sale, use and distribution of non-compostable disposable items.

Lauren Scott, director of corporate affairs with CJ Biomaterials, spoke at the public hearing on the ordinance and

was supported by key players in the bioplastics industry, including the Biodegradable Products Institute, Ingevity and Danimer Scientific. Scott's testimony in support of the city's efforts stated: “By removing single-use plastics from circulation in Irvine, the city will help address contamination of the organics recycling stream that is caused by traditional plastics. These generate microplastics and introduce harmful contaminants into finished compost. Limiting packaging options to those that are compostable will help consumers sort out their waste properly as more facilities accept and process compostable products.”

After extensive public testimony, the ordinance was tabled to give officials time to revise the plan. This local momentum to transition away from traditional single-use plastics is encouraging and demonstrates how the industry is expanding collaboration to the public policy space to drive needed regulatory changes.


Another example of continued collaboration among industry players is evident in California's SB-54. There are numerous challenges to the way the regulations are written, which are unintentionally stifling the adoption of compostable materials. CJ Biomaterials and its value chain partners continue to meet with stakeholders in the state and engage in the regulatory process to ensure

the language aligns with the broader objectives of reducing landfilled plastics and creating a circular economy. This work continues forward and is greatly dependent on collaboration between a broad cross-section of people and organizations to understand the implications we regulate and engage to drive smart policy.

The industry's most immediate need is to focus on collaboration to address the outdated organics standards within the National Organic Program (NOP). These standards currently restrict the inputs allowed for use in compost for organic agriculture and do not allow for the inclusion of compostable packaging. These standards are becoming an increasing threat to our industry as states such as California are adopting these standards in state code. While well intentioned, they are inadvertently creating a null set in California. Stakeholders are mobilizing to address the need to update these standards to reflect modern times and materials, and the National Organics Standards Board (NOSB) is considering updates to these standards in 2024.

## Bringing in new collaborators

Given the challenges composters have faced, as discussed above, and their posi-

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### Sustainable straws





Biobased food packaging

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tion in the value chain, they are the group that exerts the most influence in shaping outcomes for compostable material. It is important that we include them and that we all work together to establish a circular approach to collaboration.

The inclusion of NGOs is imperative as they are extremely influential. They hold people and organizations to the commitments they make, and one thing that they are very good at is being active in shaping key regulations - California's SB-54 is a great example of that. We need to work with them and government agencies to put together guidelines that will ensure the entire system works.

Today, we need a broad coalition that includes composters, recyclers, material suppliers, compounders, converters, brand owners, NGOs, government and end users. All these segments offer different, valuable perspectives to the conversation and should have a voice in shaping legislation and practices that will impact the entire industry.

As we are building on this collaboration, we need to expand from a regional to global approach. Looking at the three major regions of the US, Europe and Asia, there isn't one approach that is currently working. The US is following the lead of a few influential states; Europe is focusing on recycling and struggling to make

any headway in their efforts to reduce plastic waste; and Asia is taking myriad approaches, none of which have been overly successful. Working together globally, we will have a much greater impact.

### A modest proposal

In this article, I have focused on the issue of making compostability a viable solution to at least some segments of the plastic waste problem. It is one tool in a diverse toolbox that can help us manage our plastic waste dilemma. Yet, the infrastructure for compostability is relatively young and unsophisticated compared with the ones

in place for the 3Rs. It may be time to develop an organization - a compostability coalition - to address the issues that face us.

Technologically, the bioplastics industry is prepared to help the world address the plastic waste challenge. The performance is there, as well as the economics. What we need to succeed is collaboration across the value chain in order to effectively influence the regulatory framework to increase compostability to a level where it will have an impact and contribute to solving the plastic waste problem.

Over the next couple of years, the industry is going to continue to move forward, working to meet the goal set by the 2025 Plastics Pact that 100% of plastic will be reusable, recyclable or compostable by 2025.<sup>2</sup> Currently, 65.4% of plastic fits this category.<sup>3</sup> That goal may be a bit ambitious for 2025, but the industry continues to make great progress. To succeed in meeting goal, and our other objectives, we need to band together.

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2 "U.S. Plastics Pact Roadmap to 2025," <https://usplasticspact.org/roadmap>, Accessed 4 Jan 2024

3 Southey, Flora, "Big Food plastic targets 'expected to be missed,'" Food Navigator Europe, William Reed, 2 Nov 2022, <https://www.foodnavigator.com/Article/2022/11/02/Plastic-targets-expected-to-be-missed-Ellen-MacArthur-progress-report>, Accessed 4 Jan 2024