

This company thinks its plastic alternative can help solve climate change

By Rishi Iyengar, CNN Business

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(CNN) — For companies around the world and across industries, sustainability has rapidly gone from a nice-to-have to a business imperative. Global brands including Amazon, McDonald's, Ikea and General Motors have announced ambitious plans to eliminate single-use plastics, reduce carbon emissions and otherwise shrink their environmental footprint in various ways.

Newlight Technologies hopes to speed up that process with a biodegradable material that can be molded like plastic.

The California-based company has spent more than a decade developing a material it calls AirCarbon, which it says functions exactly like plastic but is completely biodegradable.

Newlight developed the material using microorganisms found in the ocean that feed on methane and carbon dioxide — two greenhouse gases among the biggest contributors to climate change. The organisms turn those gasses into a natural polymer that can be shaped or molded just like plastic.

"We call that AirCarbon because it's air and carbon dissolved in water," CEO Mark Herrema told CNN's Rachel Crane. "We have this pure white powder that we can then melt and form in all kinds of parts and pieces."

The company's new production facility in Huntington Beach is filled with large saltwater tanks that recreate ocean conditions, allowing the organisms to replicate the process of making the polymer from which AirCarbon can be extracted.

Food and fashion

Newlight recently began rolling out its first set of products made from the material, launching two retail brands aimed at two of the world's most polluting industries. Its foodware brand, Restore, sells biodegradable straws and cutlery, while its fashion brand Covalent sells handbags, wallets and sunglasses.

And because the process of developing AirCarbon uses gasses from the atmosphere, the products are carbon negative, meaning they take out more pollutants than they use. Newlight has received carbon negative certifications for its products from independent third parties, including the UK-based Carbon Trust and environmental certification firm SCS Global Services. It has also been recognized for environmentally friendly innovations by US regulators such as the Environmental Protection Agency (EPA) and the Food and Drug Administration (FDA).

Newlight is also trying to let customers know exactly how much carbon the product they just bought is eliminating. The company has partnered with IBM to use its blockchain technology to track every step of the manufacturing process and its carbon footprint.

"Most people want to do something good, right? And the problem has been a lack of information," Herrema said. "When you go up and you look at buying that t-shirt, you don't know that there's 700 liters of water that was used just to make that t-shirt. If you knew that this one was 700 liters and this one was seven, that may impact your decision making. So we want to do the same thing on the carbon side."

Scaling up

Newlight's biggest challenge will likely be scaling up production fast enough to keep prices down. Its current product offerings range from a cutlery set for \$6.99 to a handbag for \$520 — a little costlier than some traditional equivalents currently available on the market.

The company has just the one facility, which makes enough AirCarbon products to remove the equivalent of 100 million pounds of carbon dioxide per year — which Herrema says is roughly equivalent to taking 6,000 cars off the road. But his goal is to build more facilities as quickly as possible and eventually increase that number to 20 billion pounds, which he says is how much plastic ends up in the ocean each year.

"If you really want to have a massive impact on the environment, you have to focus on performance and you have to focus on price and you have to focus on scalability," he said. "Otherwise, it's just a good idea, and that's not good enough."

The retail brands are only a small part of Newlight's strategy. Replacing virtually all the plastic in the world will involve getting the multinational companies that use it to sign on. Herrema says the company is in talks to partner with other brands.

"What we hear from brands is: 'Hey, if there's a solution, we want to adopt it,' because they want to get rid of plastics as badly as anybody else," he added.

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