

Wear a T-Shirt & Reduce Climate Change - Xinterra Sucks Carbon Dioxide from the Air

To help solve one of the most pressing problems humanity faces, said Xinterra CEO Patrick Teyssonneyre, Xinterra focuses on developing materials such as textiles to remove carbon dioxide (CO₂) from the air. “We know materials can help solve the problem. We started with textiles to make an impact,” he said. “Textiles can be bedding, tablecloths, towels or even national day flags.” The same concept can also be used in paint and other materials.

Innovative Materials take CO₂ Out of the Air

Xinterra was started in March 2021 by a founding team that includes materials scientists and engineers from organisations such as MIT and A-STAR. “We were frustrated by the way traditional materials are developed, why change takes so long and why it costs so much. We started using AI to create new materials. We created materials in record time and launched our first, the CO₂TERRA brand, to remove carbon dioxide from the air. The beachhead market is textiles,” Patrick explained.

“Our initial thought was that we can add these materials into items in our day-to-day lives to remove large quantities of carbon dioxide. We can be a trend-setter.”

Xinterra also solves peoples’ dilemma of needing to choose between products that are more sustainable or cost competitive, Patrick noted. Xinterra uses AI come up with something that does not require sacrifice by the consumer.

CO₂TERRA is a milestone, Patrick said. “We know our platform works. We proved that we can create groundbreaking materials in record time. We filed a patent application in August 2023. It took 11 months. Compare that to the three-to-five years a material company will usually take. We can use our learnings and find new products even faster, in 6 or 7 months.” Over time, he said, Xinterra will launch other materials and new growth avenues.

The formulation allows a manufacturer to apply a liquid in the conventional finishing stage of textiles manufacturing, he explained. When fabric goes through a machine, a liquid is added and the process impregnates the formulation into the fabric. An oven is used to dry and cure the fabric.

When people wear the fabric in clothes, such as a T-shirt, they capture CO₂ in 8-14 hours. The CO₂ becomes a mineral during the washing process, which prevents it from being released back into the atmosphere. The carbon removal agent is then recharged in the same washing process, so it starts capturing CO₂ all over again. “The product removes 16 to 41 grams of carbon dioxide from a T-shirt, which weighs about 200 grams, over its lifetime, depending on the type of fibers, weight of textile and total number of wears of the T-shirt”.

Xinterra didn’t want to add complexity to existing manufacturing processes, so it developed a product that doesn’t require new machines or different manpower. In the final finishing step, CTO Jatin Kumar explained, it is common to add materials such as fabric softener, flame retardant or hydrophobic coating. “You can add our coating together with those during the finishing process. You’re not changing the number of steps because our formulation gets coated together with the other finishing chemicals.”

Xinterra is Selling its Formulation Worldwide

Xinterra plans to start manufacturing the formulation and selling it to textile companies, Patrick said. “Some are coming to our lab and experimenting with our machines and formulations. We will run the first industrial scale trial in November (2023).”

To sell the product, he said “we approach the fashion brands and the textile manufacturers who supply the brands. The brands sell directly to consumers. They know what they want to offer. They can demand that the textile mills adopt that solution. Brands count on suppliers to introduce innovations, so we approach both. Some brands assign us to talk to their

suppliers. There are also cases where mills visit us, then visit the brands and introduce our solution.”

“We talk to brands and mills in Europe, the US, Southeast Asia, China, Sri Lanka, Brazil and other markets through email and Zoom,” Patrick said. “The companies here in Asia either come to our lab or we visit them.”

“For pre-sales,” Patrick explained, “we provide samples for the customer to validate. We try to be together with the customer to run the trial. We expect to sign an agreement for sales by the end of 2023.

Brands can adopt COzTERRA to reduce their carbon footprint, Patrick said. “It’s also a business opportunity, especially for Gen Z. They are aware, concerned, anxious and asking if there will be a place on the planet. They want to take action. COzTERRA gives hope to Gen Z. We enable them to take action to fight climate change.”

“A lot of people find it appealing that they have the power to act against climate change,” Jatin observed. “They want to do something. This is what we created. It goes back to our vision.”

While Xinterra doesn’t provide financial data yet, as it is in the pre-commercial stage, the market is huge. The total addressable market is US\$13 billion, Patrick said, and that is just part of the global total of US\$227 billion for the fashion industry.

Xinterra has two ways to monetize its products, Jatin added. One is to manufacture the product and sell it. In selected cases Xinterra can also license it to companies that will manufacture and commercialize it.

The Cumulative Impact is Huge

While the individual impact seems small, the cumulative impact is far larger. “A medium-size textile manufacturer can produce 8 million T-shirts in a year. That is just one company, one brand, in one part of the world.” If each of those 8 million shirts takes in 41 grams, for example, all those shirts would take in about 328,000 kg of CO₂.

To increase impact, Patrick said, “we want to reach the consumer and generate awareness. It’s similar to Gore-Tex and Intel Inside.”

The result, Patrick said, is “individual action, collective impact. Everyone becomes a carbon removal agent. Together, we create a huge impact to fight climate change.”