

A New Carbon Economy for a Blue-Sky Future.

Carbon capture and utilization technology captures and utilizes carbons derived from different waste streams and converts them into everyday consumer goods and fuels. LanzaTech has developed and scaled up a core biological platform in parallel to the engineering needed to scale this technology commercially with multiple plants in construction globally, using a range of feedstocks and 2 operating plants, producing ethanol from captured industrial emissions in China.

LanzaTech's nature-based solution leverages synthetic biology and AI to expand the product portfolio from the building block ethanol, to chemicals that currently come from petrochemical feedstocks.

Today the chemical supply chain for consumer goods has clear environmental challenges, as they have limited options outside of using fresh fossil inputs for the production of the materials that society uses every day. Not only are they impacted by market fluctuations of commodity prices, but their production lines are also a major source of emissions and pollutants in our atmosphere. Unlike traditional chemical manufacturing plants that are dedicated to the delivery of a single product, the LanzaTech process offers a "hardware / software" approach, enabling flexibility in terms of the product focus. In a LanzaTech chemical manufacturing plant the microbe can be viewed as the 'software' to the 'hardware' of the production facility. To change product focus only requires a "software change" such that the microbe used in the facility is swapped out. A facility producing the monomer chemicals used to make polyethylene can be switched to making the monomers for rubber within a few days. Producers of synthetic fibers or plastics who want to use waste as a resource, avoiding environmental, economic or social consequences of using fossil, can now react quickly to market cycles and switch to a different product ('software change') when sourcing chemicals using this approach.

This presentation will highlight the opportunities for recycled carbon across numerous product markets, from ethanol derived consumer goods (fragrances, cleaning materials, detergent and textiles) to direct production of chemicals (IPA and Acetone).