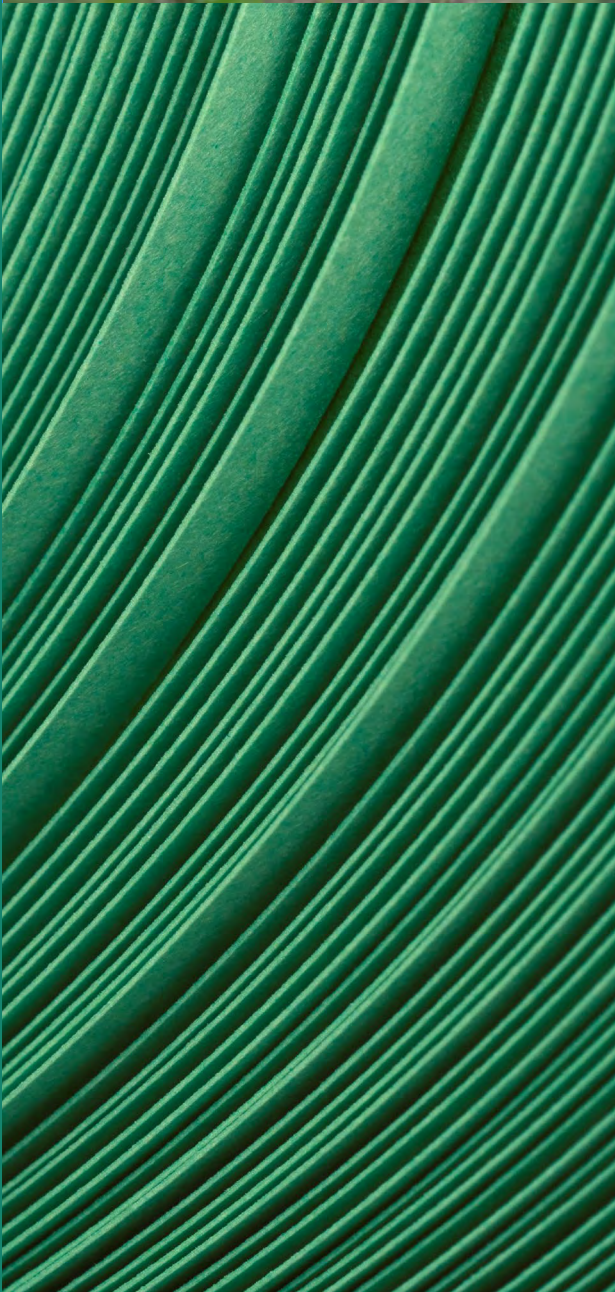


2021

Impact Report



LanzaTech



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Rising to the Challenge and Meeting the Moment.

A letter from our CEO, Dr. Jennifer Holmgren

At LanzaTech, we are creating a post pollution future. A future where there is no such thing as waste, and where, in fact, waste is the raw material for the next generation of products. Since 2005, we have been working to create this closed-loop system using waste carbon to make the things we use in our daily lives. Today, thanks to LanzaTech's platform, you can walk into a store and purchase clothing, detergent, dresses, cosmetics, and cologne made from recycled carbon emissions.



We have been fortunate to have not only an incredible global team, but to also have supportive friends to partner with on our journey. Partners who share our vision of transforming today's fossil carbon economy into a future where we are not dependent on virgin fossil resources for everything we consume.

To show the world how to create a circular carbon economy, we lead by example. In 2021, our commercial plants produced over 30 million gallons of ethanol from waste carbon, the equivalent of offsetting 150,000 metric tons of CO₂ from the atmosphere. Our operations at scale using different gas streams have also shown that we can convert more than 90 percent of the carbon in CO₂ gas streams into ethanol. Beyond carbon efficiencies, our process is designed to recycle over 90 percent of the water we use. In addition, the spent bacterial biomass from our process can be used as a nutrition source for aquaculture. This is circularity in action.

Circularity has become a new way of doing business since the pandemic. Companies are throwing out their playbooks and starting to rethink how to do more with less and become more flexible in dealing with a changing environment.



Transformational change, however, requires everyone to get involved. We are developing partnerships with companies, universities, trade associations, NGOs and governments, including the World Economic Forum and the Sustainable Markets Initiative. We reinforced our commitment to lifecycle sustainability by continuing to work closely with the Roundtable on Sustainable Biomaterials (RSB). Together, we can work harder and faster to ensure we achieve our climate goals.

We understand that our commitment to sustainability requires a holistic approach to environment, social, and governance (ESG) factors, within our company. In 2021, we looked internally and, for the first time began establishing benchmarks to measure our impact and the contributions we are making to achieve equality, foster innovation, become more engaged in the communities we serve, and take urgent action to combat the climate crisis and its impacts on all communities.

As a woman and an immigrant, I am proud of the diversity of our team, including our executive team. The diversity of our leadership has helped create an environment to support employee led initiatives, such as our Diversity, Equity

& Inclusion (DEI) group, Blend, which grew considerably in 2021. We produced our DEI plan to communicate how our ideals, rooted in DEI, permeate the company. Through outreach, training, workplace policies, and recruitment, our goal is to empower individuals from all groups and identities. Blend continued to promote diversity in science, technology, engineering and mathematics (STEM) and launched our first internally facing mentoring program. Our Green Group continues to grow, encouraging and leading company-wide sustainability initiatives.

I am proud to share the achievements of our global team in our first Impact Report. Our team members have made clear that they can rise above any challenge to accomplish great things. They have stepped up to meet the moment. They are leading the way to a Post Pollution future.



A handwritten signature in black ink that reads "Jennifer Holmgren".

Dr. Jennifer Holmgren
Chief Executive Officer

Introduction:

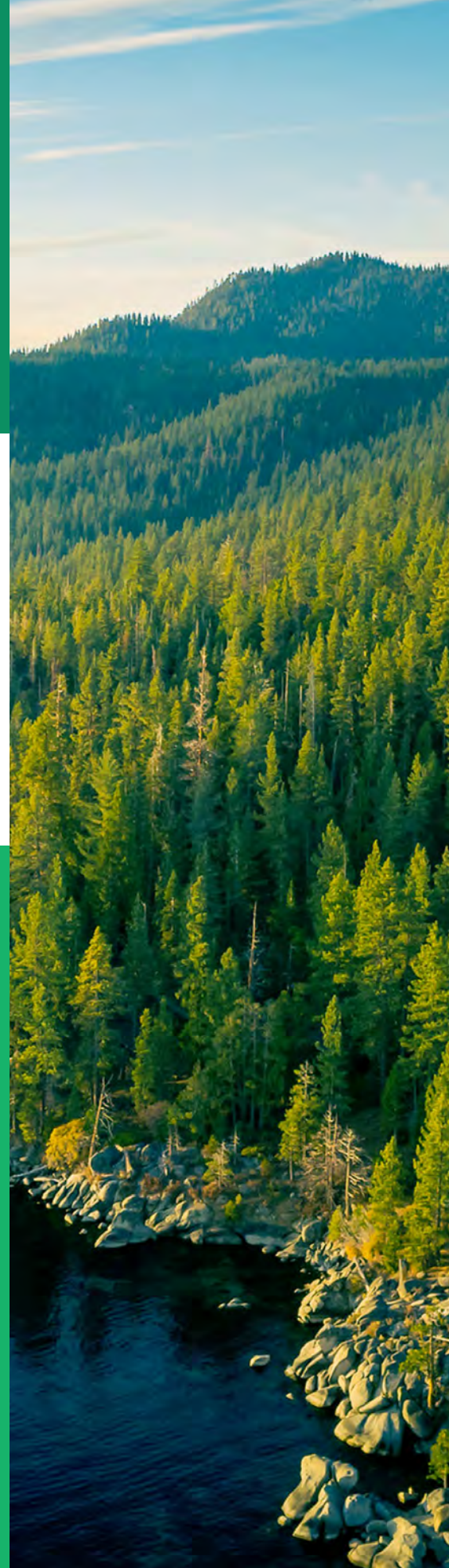
Our Approach to this Report & ESG

At the end of 2021, LanzaTech launched its company-wide process to integrate and institutionalize ESG (environmental, social, and governance) into our business, including the creation of a new ESG Manager role. This inaugural Impact Report sets the context for our sustainability story.

Defined by more than just our world-leading carbon capture and transformation (CCT) technology, we are a company made up of incredible people from diverse backgrounds striving to make a difference. We are proud that our company-wide ESG integration process will incorporate, build on, and support our on-going and innovative, team member-led, initiatives and contributions.

As a first step, we have begun the process of conducting an in-house materiality assessment. The outcome will guide the setting of our priorities, and the development of our ESG roadmap and strategy, including data gathering processes and key performance metrics for year-on-year tracking and reporting. All of which will be fully aligned with and serve LanzaTech's mission, core values, and business. We are excited at the prospect!

Freya Burton
Chief Sustainability Officer



Our Mission

To create a post pollution future where waste carbon is the building block from which everything is created.

LanzaTech is focused on bringing about real and long-lasting change in the world. We believe that it is possible to build a strong and profitable business while also prioritizing social and environmental needs: doing well by doing good. Our company values embody the United Nations Sustainable Development Goals and we are contributing to them significantly both internally and externally.

LanzaTech & The United Nations Sustainable Development Goals

United National Sustainable Development Goals

LanzaTech Activities



Achieve gender equality and empower all women and girls

Diversity, inclusion and equity are one of our core values. We have promoted this value by introducing new diverse hiring practices to broaden our applicant pool across all positions. We have 38% women in leadership and have achieved gender parity in three science teams.



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Safety is our top priority. We are committed to fostering a safe, inclusive, and decent workplace for our employees to reach their full potential. Employee well-being is paramount, which is reflected through our safety program, benefits package, and community outreach efforts.

United National Sustainable Development Goals

LanzaTech Activities



Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Through growth in our synthetic biology platform and capabilities, we are improving the performance of our ethanol producing biocatalyst, and developing 2nd generation products to reduce further the world's carbon footprint and our technologies' overall operating costs. We are continuously improving our systems and processes and in the past year, have developed new ways to valorize previously inaccessible feedstocks.



Ensure sustainable consumption and production patterns

The core of our business is enabling the circular carbon economy. Through our process, we can recycle and valorize carbon-rich/hard-to-abate emissions and waste into sustainably produced fuels and chemicals — the building blocks of CarbonSmart™ products, which will provide consumers with sustainable products with a lower carbon footprint.



Take urgent action to combat climate change and its impacts

The purpose of LanzaTech's business is combatting climate change.

Our sustainably-produced fuels and chemicals offer overall carbon savings compared to fossil-derived products. Besides GHG emissions, our technology avoids challenges associated with waste management, land use change, biodiversity impact and fertilizer/runoff.



Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

We are committed to protecting and promoting sustainable land use by detaching our products from feedstocks that require arable land to grow. We work with agricultural waste streams to find alternative solutions to combustion, avoiding pollutant and particulate emissions. Furthermore, through the integration of gasification, we contribute to the reduction of waste entering landfill which in turn lowers methane emissions.



Strengthen the means of implementation and revitalize the Global Partnerships for Sustainable Development

Partnerships are critical to technology development and deployment. Our partners range from financial institutions to technology leaders, consumer brands, NGOs, and government entities, all of whom share our core values and help to bring our products to market.



LanzaTech Affiliations

At LanzaTech, we have long recognized the power and impact of working with others. As we have grown, we have developed close working ties and partnerships with organizations, consortia, advocacy, and advisory groups worldwide. Our international team actively engages with these groups across multiple sectors and initiatives - from synthetic biology, to supporting policy frameworks, to leveraging our expertise to help new organizations entering the sector.

We are pleased to be affiliated with the following:

- Advanced Biofuels Canada (ABFC)
- ARC Center of Excellence in Synthetic Biology
- BioMADE
- Biotechnology Innovation Organization (BIO)
- Carbon Capture Coalition
- The Carbon Recycling Network
- Center for Advanced Bioenergy & Bioproducts Innovation (CABBI)
- Clean Hydrogen Future Coalition (CHFC)
- Clean Skies for Tomorrow Coalition
- Engineering Biology Research Consortium (EBRC)
- Industrial Innovation Initiative (I3)
- Renewable Carbon Initiative
- The Roundtable on Sustainable Biomaterials (RSB)
- The SAF Consortium New Zealand
- Sustainable Aviation Fuel Blender's Tax Credit Coalition (SAF BTC Coalition, US-based)
- Sustainable Markets Initiative (SMI)
- UK Jet Zero Council (JZC)



Protecting Each Other

People – our global team, our communities, and those our technology touches – are core to LanzaTech’s business and success. We work hard to create and maintain safe, productive, and creative work environments where our team members can thrive, contribute, and maintain personal well-being. Only through such support, can our workforce be happy, healthy, and committed to making a positive impact on the world.

Safety Above All Else

Safety is LanzaTech's top priority. Our Environmental, Health, and Safety (EH&S) team works hard to ensure the health and safety of our global team in all settings, from commercial plants to our office spaces. Employee participation is critical to keeping safety at the forefront of what we do across the organization. Our "No Blame" safety culture allows everyone to engage with safety, and fosters a culture and work ethic that promotes continuous systemic improvements across all areas of the company. Additionally, we work extensively with our partners to ensure that our technology is deployed and operated safely, regardless of geography.

0

Recordable injuries

0

Lost time injuries

0

Confirmed workplace COVID-19 transmissions

>93%

Voluntary global COVID-19 vaccination rate

Streamlining our EH&S Systems & Processes

In 2020 we launched our online safety training company-wide called "LanzaTech University." In 2021, this platform was streamlined further. It has proved to be an invaluable tool, allowing our EH&S team to effectively build, manage, and optimize a safety management program focused on protecting our workforce. The team easily assigns and tracks trainings, ensuring that employees receive the proper knowledge and tools to do their jobs safely. LanzaTech University allows us to effectively communicate the latest approved safety practices and policies to our entire team.

EH&S reporting is a critical component to our safety culture. Updates to our reporting process facilitate the capture of safety data to quickly and accurately identify trends while building safety intelligence. EH&S reports have directly impacted increasing productivity, lowering incident rates, and reducing costs. With the help of our global Safety Committee, we are constantly reviewing data, and analyzing new ways to streamline and improve this process.

"Looking out for the safety of one another is critical for everyone at LanzaTech. Having accurate data at our fingertips enables more in-depth observations and analyses, leading to the development of increasingly effective training tools."

Emily Brown
Senior EH&S Generalist



LanzaTech Management System (LTMS)

LanzaTech recognizes its responsibility as a global corporate citizen, as well as an advocate and a leader in Carbon Recycling. Through our ISO 9001, ISO 14001 and ISO 45001 compliant LanzaTech Management System, we will:

- Maintain compliance with applicable environmental and occupational health and safety laws, regulations and other obligations. When our own requirements are more stringent, we operate to these higher standards.
- Develop, document and continuously improve procedures, processes, and systems which enable us to responsibly assess and manage our risks involving environmental impacts, occupational health and safety hazards and product quality.
- Provide employees with information, instruction and training to ensure that they understand their roles and responsibilities related to the LTMS.
- Work with stakeholders to ensure our environmental, occupational health and safety, and quality obligations to them are met.
- Promote and foster a culture where it is the responsibility of all employees to work in partnership for the benefit of the LTMS.
- Make this policy available to all stakeholders who may be affected by the LTMS.



Image L-R: Jim Daleiden, Senior Bioprocess Engineer; Tim Politano, Bioprocess Engineer

Keeping our global team safe through the COVID-19 Pandemic

Throughout the year, our EH&S team worked tirelessly to stay up to the date with the latest local COVID-19 mandates, guidelines, and advisories, from which internal LanzaTech protocols were developed. They successfully kept our team members safe while maintaining business continuity. The ability of our EH&S team to be dynamic and thoughtful, helped ensure a safe work environment for all.

Our most impactful new COVID-19 policy provided all eligible full-time employees with up to 80 hours of paid COVID-19 sick leave in addition to their existing regular sick leave. Our team is our family, and they are core to our company's on-going success. This policy was implemented to ensure their safety while reducing stress and uncertainty around having sufficient sick leave to care for themselves and their families.

Other COVID-19 support to our global offices, included:

Non-U.S. Offices and Overseas Support

- Masks were sent to all offices and team members.
- Work from home was encouraged when and where possible.
- Covering all costs to source and ship oxygen concentrators to every member of the LanzaTech India team; as well as using our logistics infrastructure to ship oxygen concentrators to hospitals in Sri Lanka.

U.S. Offices

- Masks were provided to all team members throughout the year. Initially, before vaccines were available, masks were mandatory for those working onsite.
- Work from home was required for non-lab-based team members until vaccines became available and vaccination rates reached appropriate levels.
- For those working onsite, measures were put in place to allow for proper social distancing, including staggered returns to the office and assigned desks.
- Contact tracing badges were introduced which team members had to wear while onsite and required scanning out at the end of every workday. This proved to be an effective tool for accurately determining close contacts at work.
- Screening kiosk systems were set-up for daily temperature and symptom checks upon arrival at the office.



Image: Pamela Cabrera, Senior Research Associate



Design & Process Safety

Design and process safety are critical to our success by allowing us to identify potential risks and areas for continuous improvement. This ensures our facilities are designed, constructed, operated, and maintained in a manner that will not cause harm to employees, the community, or the environment. Within this context, compliance with regulatory standards is a priority at LanzaTech. Given our global reach and the diversity of our clients, staying current on regulations and incorporating them into our design and processes is vital to the safety and success of our operations.

“With demands for improved workplace safety and environmental protection increasing, design and process safety management is more important than ever. We follow the guidelines, adopt best practices, and strive for the best in class in everything we do.”

Dr. Eric Peterson

Senior Process Safety and Risk Engineer



Employees, Diversity & Community Outreach



Image L-R: Dr. Glennon Bythrow, Senior Scientist; Amanda Ly, Bioprocess Engineer; Tarik Hunt, Fermentation Research Associate

43%

Growth in global team between 2020 and 2021

289

Full time employees end of 2021

38.5%

Of employees promoted in 2021 were women

>60%

Of global team in science and engineering

38%

Women in the Leadership Team

50%

Of the Technical Leadership Team were women

9.3%

Turnover in 2021

0

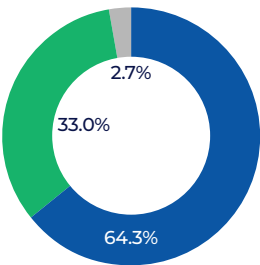
Lay-offs due to COVID-19 impact on business

2021 New Hire Diversity

Global

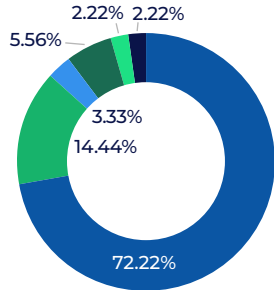
United States

Gender diversity



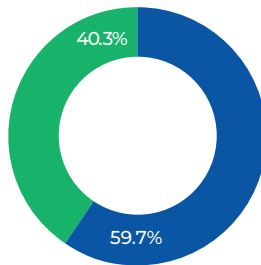
- Male
- Female
- Declined to answer

Location



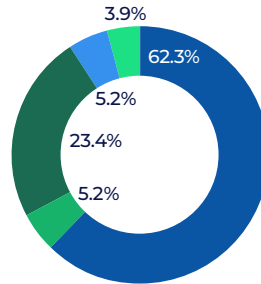
- U.S.
- China
- India
- UK
- Europe
- NZ

Gender diversity



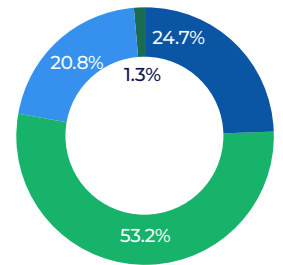
- Male
- Female

Racial diversity



- White
- Black or African American
- Asian
- Hispanic or Latino
- Two or more Nationalities

Generational diversity



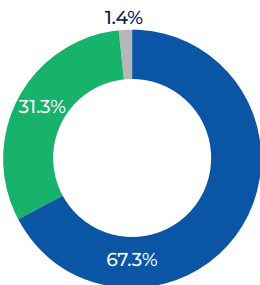
- Gen Z (<22)
- Millennials (22-40)
- Gen X (40-58)
- Baby Boomers (>58)

2021 Employee Diversity

Global

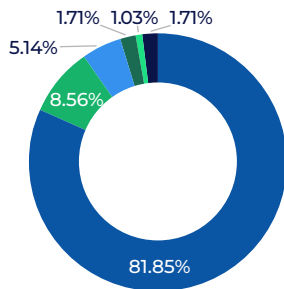
United States

Gender diversity



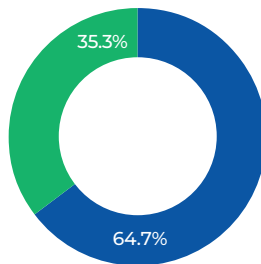
- Male
- Female
- Declined to answer

Location



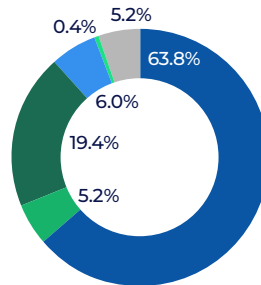
- U.S.
- China
- India
- UK
- Europe
- NZ

Gender diversity



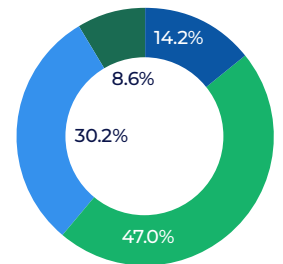
- Male
- Female

Racial diversity



- White
- Black or African American
- Asian
- Hispanic or Latino
- Native Hawaiian or Pacific Islander
- Two or more Nationalities

Generational diversity



- Gen Z (<22)
- Millennials (22-40)
- Gen X (40-58)
- Baby Boomers (>58)

Fostering Diversity, Equity and Inclusion

LanzaTech is committed to fostering a diverse, equitable, and inclusive workplace where people of all cultures, and backgrounds can succeed. This commitment starts at the top with our CEO and leadership team where women lead:

- Engineering
- Science
- Catalysis, Chemicals and Hydrocarbon Fuels Technology
- External Relations
- Government Relations
- European Activities



Image L-R: June Gramling, Robert Nogle, Sarah Ye, Rohit Kalvakaalva, Stacy Marshall, Marilene Pavan, Melvin Moore.
Not pictured: Vicki Liu



In 2020 LanzaTech employees established a diversity, equity, and inclusion (DEI) focused initiative called Blend. Supported by senior leadership, Blend works with Human Resources to recruit and retain diverse employees, review workplace policies and procedures, and ensure an equitable workplace where:

- Everyone is comfortable and safe in expressing their true selves and is empowered to recognize their value
- DEI initiatives are supported by the leadership team with outcomes that influence decision-making
- Underrepresented groups achieve better representation in the company's core STEM business.

In addition, LanzaTech makes DEI plans with actionable Specific, Measurable, Achievable, Relevant, and Time-Bound (SMART) milestones and tasks focused on advancing DEI initiatives relevant to each specific government funded project. Example plans include quantifying the impact of reduced criteria pollutants in neighborhoods, developing outreach programs for schools, and incorporating DEI metrics into development plans to ensure future site locations are where they could do the most good for overlooked communities.

Human Resources and Wellness

Our people are core to our success, and we are working to create an environment where all employees are valued and respected. We are an equal opportunity employer and do not discriminate regardless of race, color, religion, gender, sexual orientation, gender identity or expression, national origin, age, disability, veteran status, or any other status protected by applicable law. Further, we require that all team members complete interactive on-line training on the importance of diversity and inclusion, anti-harassment, anti-discrimination, sexual harassment awareness & prevention, anti-bullying and anti-violence.

“To ensure equity of opportunity, access, advancement, and compensation at LanzaTech, our team conducts annual in-depth reviews of employment decisions, including for new hires, and promotions.”

Scemja Garcia

Senior People Operations Leader



Policies highlighting inclusion, accommodation, and family:

Disability Accommodation

LanzaTech is committed to equal opportunities for people with physical, and mental disabilities and is taking affirmative steps to employ, retain, and advance qualified individuals with disabilities at all levels. We strive to provide workplace flexibility and accommodations for all team members.

Compensation Philosophy

LanzaTech has a competitive total compensation package that attracts and retains a diverse, highly skilled, and talented team, including an effective salary administration program and a comprehensive benefits plan that:

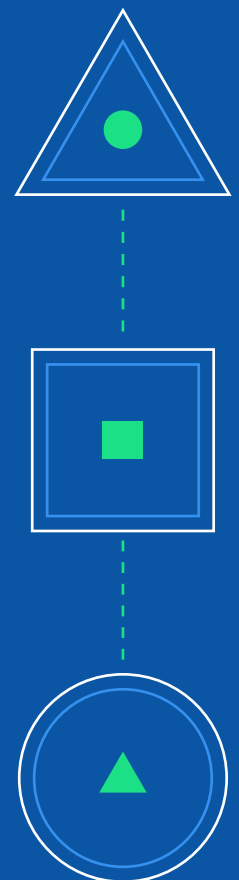
- Demonstrates our commitment to Affirmative Action and Equal Opportunity
- Recognizes individual contributions to our business
- Responds to the diverse needs of our team members, e.g., providing individual choice in managing health and welfare benefits

Parental Leave & Childcare

- LanzaTech recognizes the need for parent(s) with a new child(ren) to receive parental leave, no matter if the new family member is by way of birth, adoption, surrogacy, or legal guardianship, and without regard to the gender of the parent(s).
- Childcare Reimbursement: To ensure team members with childcare needs can fully participate in out-of-hours work commitments, LanzaTech provides support to help cover their childcare and related costs.

Additional Paid Time Off

- Juneteenth was added as a paid holiday for U.S.-based offices to celebrate this important day and recognize Black Americans' continuing struggle for social justice and equity.
- In addition to 40 hours of paid sick leave, LanzaTech provides up to 80 hours of COVID-19 sick leave to all eligible full-time employees.



Recruitment Practices

DEI is a LanzaTech core value, adherence to which makes us a better, stronger, more innovative company that reflects our global identity. Our recruitment processes include a focus on growing the diversity of our pool of well-qualified applicants by actively conducting outreach to organizations, learning institutions, and associations that promote and advance qualified women, people of color, and other diverse groups.

“I was already drawn to LanzaTech for their leadership in carbon capture and transformation. Once I started at the company, I became involved in the Employee Resource Groups, including Blend, leaving no doubt that this is a place where everyone is respected, and their voices are heard.”

Rohit Kalvakaalva
Sustainability Engineer



Image: EVP of Engineering Julie Zarraga (2nd from left) with her team. **L-R:** Joss Coombes, Engineering Fellow; Alex Chen, Process Engineer; Andy Radencich, Senior Process Engineer; Julia Mok-Kennedy, Senior Engineering Support Specialist



Supporting our Team

LanzaTech is committed to helping our employees gain the skills and knowledge they need to advance in the company and fulfill their professional aspirations. We send out annual employee surveys to gauge team member satisfaction and engagement and monitor retention and turnover rates.

- Annual employee reviews are conducted to assess progress, give meaningful feedback, and recognize contributions – including through promotions and merit increases.
- Career development opportunities are supported by the Individual Development Plan (IDP). The IDP, a voluntary program open to all, enables motivated team members to take charge of their own learning and performance by identifying, assessing, and acquiring new skills and knowledge in partnership with their team leader.
- In 2021, HR worked with team leaders to develop transparent career ladders laying out clear expectations for team member advancement and growth.

Supporting our Communities

At LanzaTech, we view giving back to the communities in which we live and work as a privilege, opportunity, and responsibility. We strive to make contributions at the community level that are meaningful, and donate a variety of resources, including our time, equipment, and money. Most of our efforts to date have focused on supporting youth activities, STEM, and the environment.

India: Provided mentorship, desks, solar lamps, and bicycles to a school near our office.

Skokie: Provided mentorship services through the Association of Women in Science as well as to iGEM students at the University of Illinois; gave lab tours and led career discussions with high school and undergraduate students, including from Northwestern University's Research Experiences for Undergraduates (REU) program; hosted community engagement programs; and combined >150 hours of volunteer service at a local nature preserve.

Freedom Pines: Took part in a mentorship program for local high-school students; sponsored academic and athletic programs; sponsored an annual event to raise funds for those living with disabilities; donated to local initiatives supporting back-to-school events and related programs.



Protecting Our Planet

LanzaTech believes in a post pollution future. Our core business and technologies are already contributing to this future by transforming waste carbon into new products, thereby keeping virgin fossil inputs underground. In 2021 we renewed our focus on our internal operations and what impact they have on the environment.

Leading with our Core Business

LanzaTech is a world leader in gas fermentation and carbon capture and transformation. We harness the power of biology and big data to create sustainably produced climate-safe products used in our daily lives.

With our vast expertise in synthetic biology, bioinformatics, artificial intelligence, and machine learning coupled with our engineering capabilities, we have created a platform that converts waste carbon into new everyday products that would otherwise come from virgin fossil resources.

We are enabling a closed loop circular carbon economy and providing our partners with a means to make their carbon reduction targets a reality.

Progress through EOY 2021

2

Commercial plants
operating

~160k

MT CO₂ abated from two
commercial units

>500

Metabolic pathways
designed and modeled for
synthesis of target products

In 2021

5

New CarbonSmart™
product launches

>130

Granted patents received

160

New patent applications





Model wearing Zara dress made from captured carbon emissions

Tackling Challenges from Many Angles

The breadth of our internal capabilities and external partner network gives LanzaTech an advantage in developing solutions to address various technical challenges. We are able to approach a single problem from multiple perspectives and ultimately determine the best and most efficient path forward.

The development of a process to convert waste carbon into monoethylene glycol (MEG), which is then used as an ingredient in polyethylene terephthalate (PET) in packaging and apparel, is one example of this.

Partnerships at work:

In 2021, we used ethanol from our commercial sites in China to produce CarbonSmart™ MEG with our partner India Glycols Limited. This renewable MEG was converted into CarbonSmart PET with conversion partners, including Far Eastern New Century (FENC). The PET was spun into yarn for dresses by Zara and Inditex, and resins were used to make PET bottles for Mibelle, for which they received the German Packaging Award 2021 in the Sustainability category. These resulting end products were available in stores and online for purchase.



**With our project partners,
Mibelle/Migros:**

PET bottles on sale in
Switzerland and Germany



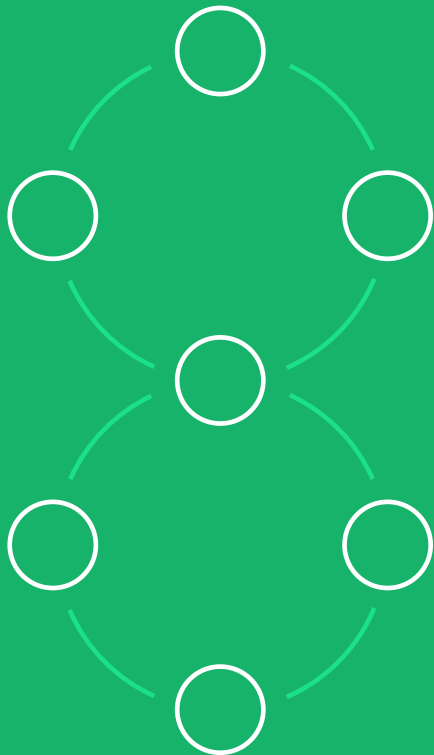
**With our project partners,
Zara and Inditex:**

Dresses made from PET
yarn on sale globally online

Simplifying Steps, Saving Carbon:

In parallel, we are part of the Bio-Optimized Technologies to keep Thermoplastics out of Landfills and the Environment (BOTTLE™) program with the U.S. Department of Energy (DOE). In this project, our synthetic biology team (with support from other teams) is working toward demonstrating the direct production of MEG from syngas derived from lululemon fabric and non-recyclable plastic waste for the manufacture of polyester and PET. This process will bypass ethanol conversion, saving time, money, and improving the sustainability profile of the end product. Furthermore, in partnership with InEnTec, Waste Management, and lululemon, this project will also demonstrate how we can directly use mixed and contaminated waste plastics that currently have little to no market value and end up in landfill. These two pieces of the project together close the carbon loop around plastic waste.

In 2022 we announced our partnership with Danone and other partners to further develop this direct MEG production pathway. With a successful proof of concept completed, we continue to work on scaling this process further.



Approach to Life Cycle Analysis

Life cycle analysis (LCA) is essential for understanding the carbon benefits of LanzaTech's process. LCAs allow LanzaTech experts to determine and design the best route to sustainability.

Given regulatory and methodological variation across regions, we regularly work with specialists around the world to ensure we stay up to date. LCAs detail the carbon footprints of all energy and chemical inputs into the final product(s) including the quality of local electricity grids. Wherever possible, we use third party analyses that are available to our customers. We further supplement with internal analyses using in-house engineering data and emission factors from appropriate published databases.

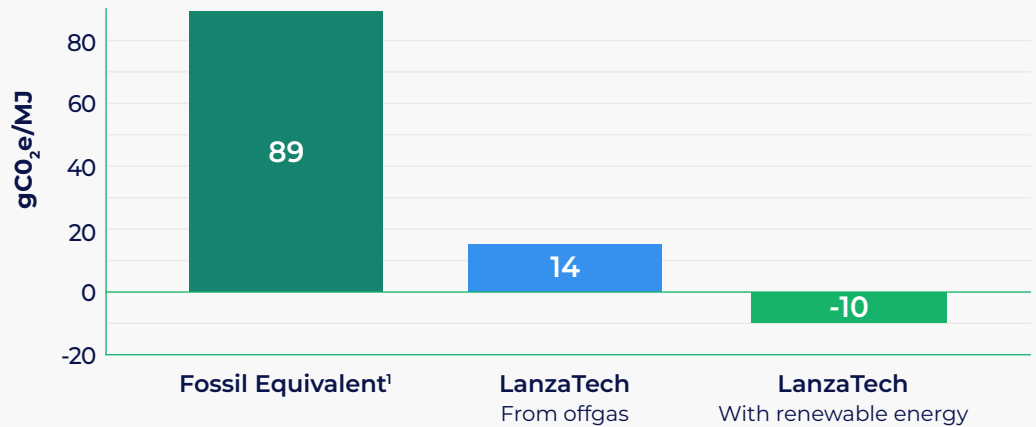
"The work we are doing comes at a critical time when reducing emissions is top-of-mind for everyone. Our in-house LCA expertise has enabled us to quantify the benefits of our technology and products for our customers."

Dr. Christina Canter
Senior LCA Engineer



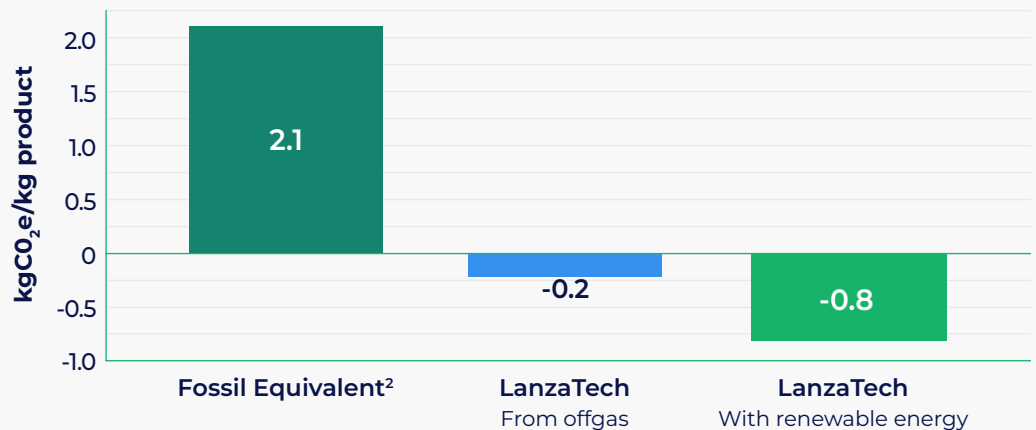
Sustainable Aviation Fuel

With LanzaJet Process



Monoethylene glycol (MEG)

As a chemical intermediate



1. ICAO Sustainable Aviation Fuels Guide, Version 2, December 2018, Page 6

2. The ecoinvent database, version 3

Scientific Data Management Capabilities

One main focus of 2021 was to develop, maintain, and improve the required infrastructure and architecture necessary to enrich our scientific data and produce valuable information. This has led to an increase in efficiency and productivity across our core business.

In 2018, we initiated the development of a data management platform that allowed us to start actively managing fermentation data from our in-house laboratories and commercial sites. The platform has now expanded to capture, store, integrate, and present additional data across all R&D divisions. The ability to leverage historical data has enabled our science teams to conduct research in thoughtful ways, make better-informed decisions, and save time, resources, and money.

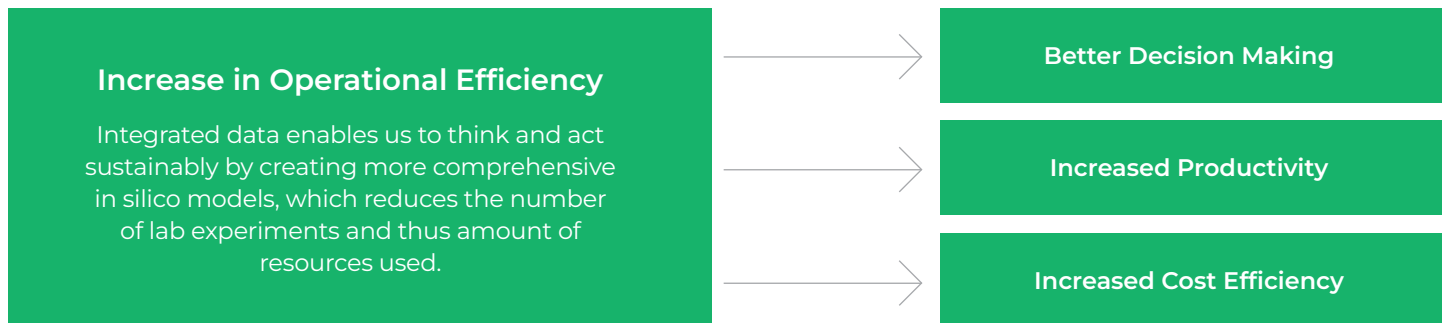


Image L-R: Stacy Marshall, Senior Full Stack Developer; Jason Bromley, Director of Process Integration

Sustainability Certification:

The Roundtable on Sustainable Biomaterials



The Roundtable for Sustainable Biomaterials (RSB) is a global membership organization accelerating the sustainable transition to a bio-based and circular economy through certification, sustainability solutions, innovation, and partnerships. LanzaTech has been an RSB stakeholder community member for many years. RSB's mission aligns with every aspect of LanzaTech's core values to advance the circular bioeconomy while protecting the environment and those most vulnerable. Our staff have participated in developing new standards and have served as chamber delegates. Laurel Harmon, VP Government Relations, is currently Vice Chair of the RSB Board of Directors.

RSB's Certification is grounded in measurable impacts on climate, nature, and society. It represents the highest standard of social and environmental sustainability for a bio-based and circular economy.



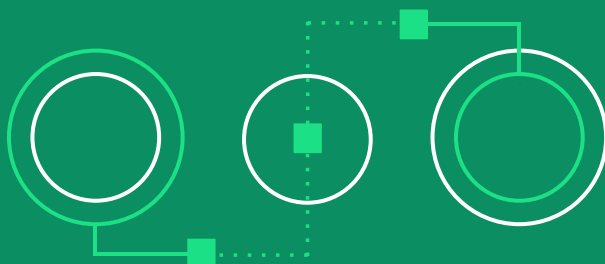
(2nd from left) Dr. Laurel Harmon, VP Government Relations at LanzaTech and Vice Chair of RSB Board of Directors with **(L-R)** Jayant Sarnaik, RSB board member; Elena Schmidt, RSB Executive Director; Maiju Helin, RSB Board Chair; and Sam Hansen, Finance & Administration Manager at RSB

To validate our sustainability:

- In 2016, LanzaTech helped our Shougang LanzaTech (SGLT) joint venture partner gain RSB certification for the demonstration facility producing ethanol from industrial emissions at the Shougang steel mill in Caofeidian, China.
- In December 2020, LanzaTech supported RSB certification of the fully commercial ethanol production facility operated by the SGLT joint venture at the same site.
- In 2021, LanzaTech supported RSB certification of the Nippon Refine ethanol purification facility at Anapachi, Gifu, Japan.

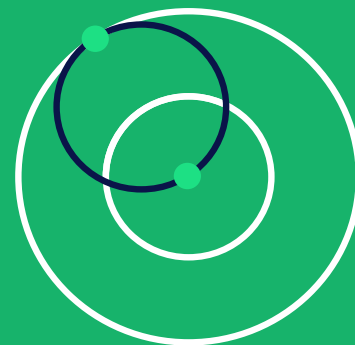
"I applaud LanzaTech for their inspirational leadership on sustainability. Developing supply chains that achieve positive impacts – evidenced with RSB certification – in the industries and value chains they work with is essential to build and maintain long-term support from regulators, civil society and the financial sector, and to advance the decarbonization journey across these sectors."

Elena Schmidt
Executive Director, RSB



Reducing the Environmental Impacts of our Operations

In 2021, we renewed our internal efforts around reducing, reusing, and recycling waste in our operations.



LanzaTech's Waste Streams

At LanzaTech, we generate a wide variety of waste, all of which must be handled properly to maintain compliance. The EH&S Team has received Resource Conservation and Recovery Act (RCRA) Hazardous Waste Management Training, and Hazmat

and Waste Ground Shipper Training to ensure we follow all guidelines and meet all standards. This training also certifies us to sign required paperwork for shipping out our waste.

Waste Stream	Description	Where does it end up?
E-Waste	Electronic waste	Recycling or disposal facility
Scrap Metal	Scrap metal falls within the purview of the complex and is collected and handled by Illinois Science + Technology Park (ISTP).	Recycling facility
Cardboard & Recycling	General building recycling that is collected by ISTP	Recycling facility
Gloves & Pipette Tip Boxes	Collected by LanzaTech	Recycling facility
Common Trash	General trash and debris that is not recyclable, and is safe to be sent to landfill.	Landfill
Universal Waste	Batteries, pesticides, mercury-containing equipment, lamps, and aerosol cans.	Sent to a facility authorized to treat, dispose, or recycle each type of material
Hazardous Waste*	Waste that contains properties that may be harmful to human health and/or the environment as defined by the EPA.	Incinerated
Non-Hazardous Waste*	Waste not defined as EPA Hazardous waste but is a chemical or biological substance (or a material that has come into contact with the former) that could cause harm to the environment or human health.	Incinerated

*Chemicals can fall under Hazardous or Non-Hazardous categories. The EH&S team worked with teams to ensure proper waste handling.

Pandemic Challenges to Reduce, Reuse and Recycle:

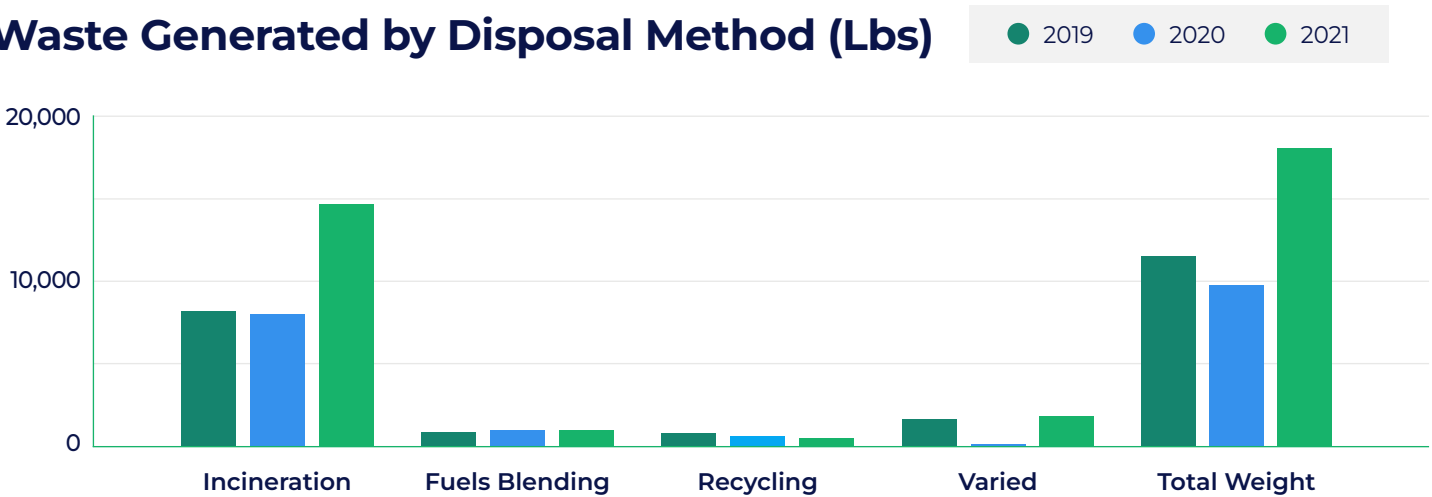
Unfortunately, COVID-19 continued to impact our sustainability goals throughout 2021. Our safety precautions and measures have allowed us to maintain business continuity and increase our employee headcount. However, due to the highly

transmissible nature of the virus, we had to keep several safety measures in place, such as disposable masks and biodegradable utensils which increased our volume of common trash.

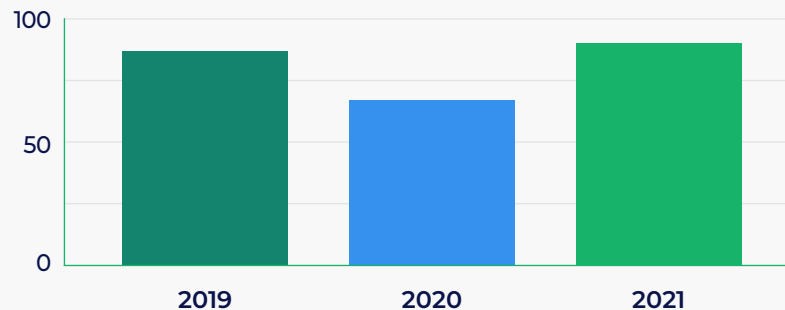
For our plastic waste, we implemented the following programs:

- Pipette tip box recycling program in our Skokie facility with plans to roll out at Freedom Pines.
- Pipette tip washer program in our Skokie facility enables our labs to reduce waste and prevent recyclable plastic (polypropylene) from entering landfill. This will also lead to cost savings in lab operations through reduced consumption.
- Polystyrene recycling program with New England Biolabs, where coolers are shipped back and recirculated instead of entering landfill.
- Waste reduction at Freedom Pines by giving each employee a reusable metal water bottle as a replacement for single use plastic ones. This program was cost effective and helped to keep water cool on hot summer days.

Waste Generated by Disposal Method (Lbs)



Waste Generated per Employee (Lbs)



*per Skokie team member

**Between 2020 and 2021, there was a 35% increase in our Skokie team numbers, lab employees returned to the Skokie facilities June 2020, and non-lab employees returned to the office starting in mid-2021.



Robot in action in LanzaTech's BioFoundry, saving us time and increasing our efficiency

Freedom Pines

Freedom Pines is a 280-acre LanzaTech facility located in Soperton, Georgia. The facility has been under LanzaTech ownership since 2011 and plays a critical role in the scale-up and development of key process technologies, enabling us to rapidly iterate between laboratory and demonstration scale research.

The team at Freedom Pines staff the facility 24 hours a day, 365 days per year, ensuring that we are able to:

- Deliver high quality commercial products and valuable data with a fast turnaround for process development and optimization throughout the year.
- Explore and perfect operating strategies and routines to identify and overcome aspects of the process that are susceptible to upsets and downtime.

“Freedom Pines serves as a bridge between research and development and commercialization of our technology. The facility is a direct demonstration of how we enable the transition to a carbon-free economy and address the rising demand for sustainably-produced products.”

Brian Horton
General Manager,
Freedom Pines



Energy Consumption

2,502,695 kWh

Scope 1 Emissions

199 tCO₂e

Scope 2 Emissions

977 tCO₂e



Conserving Our Resources

Freedom Pines consistently and continuously prioritizes sustainability in its operations, in alignment with LanzaTech's overarching mission. This is apparent through the team's significant effort in the stewardship of resources – using them wisely and conservatively. Examples of this in practice include designing projects to minimize energy consumption, conserving water usage in our process, and engaging highly skilled workers to repair equipment.

In recent years, significant efforts have gone into stewardship of resources at the Freedom Pines site:

- Reduction in electrical usage in lighting by up to 70%, through replacing current lights with LEDs
- Reduction in fuel usage by replacing mobile equipment with electric (including golf carts and forklifts)
- Reduction in container waste and transit fuel by shifting towards bulk chemicals at the start of 2021
- Reduction in shipping costs, plastic waste, and fuel through small actions such as mixing the mobile phase for High Performance Liquid Chromatography's (HPLCs) at site versus buying from a vendor
- Reduction in electrical usage and heat loss to ambient atmosphere by insulating reactors
- Addition of solar generation to the site – an ongoing effort through 2021 that is expected to yield results in 2023

Reducing water consumption in our operations and processes continues to be a focus for many projects at Freedom Pines -- in support of both LanzaTech's and our customers' sustainability goals. In 2021, a distillation skid was added to the reactors to demonstrate water recycling for fermentation, with ongoing experimentation to maximize direct onsite recycling. Other technologies are being used to further reduce water consumption and increase water recycling, including the installation of several closed water-cooling loops for temperature control on various reactors in 2021.

Water Recycling at Freedom Pines in 2021

~157k

Gallons sent to Environmental Remedies

~149k

Gallons recycled into potable water to be re-used in the metro Atlanta area

95%

recycle rate of wastewater stream

Additional water sent to the publicly owned treatment works (POTW) was discharged into a local creek to be returned into the water cycle.

Accurate water withdrawal data available starting mid-2022

Deep Dive: Supply Chain Operations

LanzaTech's Supply Chain team is uniquely positioned to identify areas to initiate or expand sustainability efforts across the company as it is involved in the start-up, operation, and close-out of processes critical to LanzaTech's core objectives. Since moving into our current Skokie facility, the Supply Chain team has been at the forefront of LanzaTech's sustainability efforts in our day-to-day operations.

The following interview between Sarah Ye, ESG Manager, and Nora Easterday, Senior Manager Supply Chain, provides insight into the supply chain team and what they have planned for next year.

Sarah:

You and your team have initiated many sustainability efforts in our day-to-day operations at LanzaTech. What are your key motivations in these efforts?

Nora:

The supply chain team has always been motivated to be as sustainable and 'green' as possible. As the hub of the company's operations, we realize that we can have a big impact and influence other teams by setting a good example. Our goal is to inspire others to think about sustainability in areas they directly affect and help spearhead development of greener solutions across the company.



Nora Easterday (bottom right) with her team. **(L-R)** David Berkowitz, Inventory Clerk; Gerardo Ontiveros, Logistics & Supply Chain Specialist; Teodoro Ortega, Inventory & Supply Chain Specialist; Stephanie Zulman, Procurement Associate; Leslie Sosa, Global Logistics Project Manager. **Not Pictured:** Aisya Reeves, Inventory & Materials Planner.

Sarah:

What sustainability initiative are you most proud of at LanzaTech?

Nora:

We have pushed several efforts that stand out and have had an impact on our daily operations, such as requesting the consolidation of orders from vendors to reduce packaging and number of shipments, identifying vendors who share our values, and initiating a number of recycling and re-use programs. These programs include starting a glove and pipette box recycling program, using refillable pipette tips instead of prefilled boxes, reusing internal bubble wrap and kraft paper that comes with every shipment, and most recently introducing a cardboard recycling program. While some efforts may be small, they add up over time and aggregated together have a big impact.

Sarah:

What new initiatives have you and your team introduced in 2021?

Nora:

Our newest initiative was finding a replacement for our previous glove recycling program due to that specific glove type becoming unavailable as a result of the pandemic. We were successful and now have a program that recycles all gloves.

Sarah:

What are your supply chain sustainability priorities? What do we, as a company, need to focus on moving forward?

Nora:

As a company, we need to keep reiterating how everything we do has an impact on the environment. For example, simply consolidating items into a single shipment can reduce space, number of deliveries, and even material use. This comes down to better planning and thinking through what we need in advance of needing it. Larger shipments with a single delivery, instead of smaller, rushed shipments, can cut down on the fuel usage, lower transportation costs and our carbon footprint. Planning ahead also leads to less waste being produced and entering landfill.



Responsible Governance

Good governance is the foundation upon which our strategic planning, performance management and risk management are based. We believe that strong governance promotes a culture of integrity by increasing accountability across all levels all levels of the team.

Good Governance in Practice

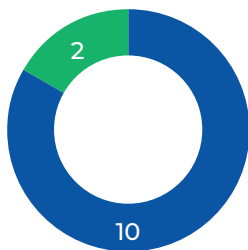
LanzaTech continuously reviews our governance framework, systems, practices, and processes to improve our ability to respond to and thrive in an ever-changing and challenging environment. Through this review process, we ensure that the interests of all stakeholders (from customers and partners to employees and leadership) are considered and fully aligned. Additionally, this framework allows us to achieve and maintain:

- Proper organizational structure and operational oversight
- Compliance
- Transparency and reporting
- Ethics and integrity
- Maximum stakeholder value

As part of our commitment to good governance, we ensure that we comply with all applicable anti-corruption, anti-bribery, and anti-money laundering laws and regulations. Our internal policies addressing those topics, as well as those for anti-trust, intellectual property, data privacy, and conflicts of interest, guide our employees on their specific business activities, no matter their geographic location.

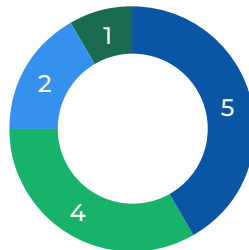
LanzaTech Board of Directors

Gender diversity



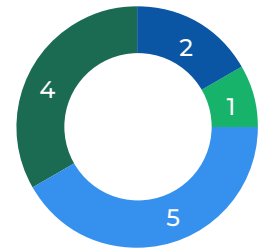
- Male
- Female

Geographic diversity



- Asia
- N America
- Europe
- Oceania

Board make-up



- Executives
- Independent
- Appointed by financial investors
- Appointed by strategic investors

The 12 directors on LanzaTech’s board come from diverse industries, backgrounds, and geographic regions reflecting and supporting our global business and aligning with our strategic direction. We recognize the value of their depth, breadth, and diversity of experience, expertise and industry knowledge, including in renewables, sustainability, R&D, oil and gas, finance and venture capital, strategic consulting, and technology commercialization.

LanzaTech Board Committees

LanzaTech's board has three standing board committees, each with its own charter, that together contribute to proper oversight and leadership in critical business areas.

Audit Committee

LanzaTech's audit committee is comprised of two directors as permanent members, with further members as activities require.

Its purpose is to carry out those responsibilities delegated to it by the LanzaTech board relating to overseeing the accounting and financial reporting processes and the auditing of financial statements. Specific responsibilities include: monitoring risk and ensuring legal, ethical, and regular compliance with applicable laws and regulations; selecting and retaining an independent auditor and reviewing reports of the audit outcomes; reviewing internal controls and reporting processes; and establishing and maintaining a procedure for confidential and anonymous submissions by employees regarding questionable accounting or auditing matters.

Nominating and Governance Committee

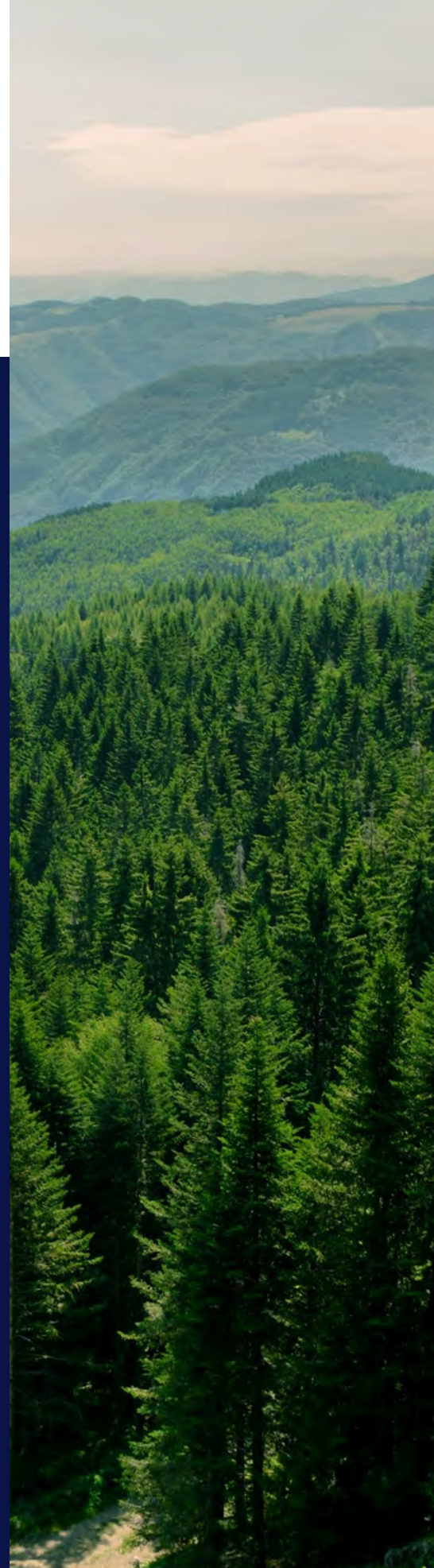
LanzaTech's nominating and governance committee is comprised of four directors.

Its purpose is to carry out those responsibilities delegated to it by the LanzaTech board relating to the director nomination process and procedures, and developing and maintaining corporate governance policies. Specific responsibilities include: determining director criteria and subsequent identification and selection; reviewing board committee structure and composition; and developing, recommending, and monitoring a Code of Business Conduct and Ethics.

Compensation Committee

LanzaTech's compensation committee is comprised of three directors.

Its purpose is to carry out the responsibilities delegated to it by the LanzaTech board of directors relating to the review and determination of CEO and executive compensation. The committee is also responsible for reviewing and making recommendations regarding any employment agreements, severance arrangements, or plans in concerning a change in control; reviewing director compensation for service on the board; and developing and recommending a CEO succession plan.



Mitigating Business Impacts of the COVID-19 Pandemic

Throughout the COVID-19 pandemic, LanzaTech's risk management processes and internal control framework effectively allowed us to maintain business continuity. We proactively kept all our employees safe, mitigated supply chain disruptions, and ensured data security.

Environmental, Health & Safety (EH&S)

Given the uncertainties of the pandemic, our EH&S team developed and implemented safety measures and protocols that resulted in our lab-based employees being able to return to the office full time in June 2020. The same protocols allowed us to welcome back office-based employees in a staggered fashion starting mid-2021.

Supply Chain

The supply chain team worked closely with our scientists to identify the most critical materials always needed on hand, purchasing sufficient stocks to ensure 12-months of uninterrupted workflow. In parallel, they identified alternate suppliers to provide back-up sources if needed. The team also coordinated across the company to restructure already tight storage to accommodate the extra materials and inventory without increasing facility space. These actions allowed our science teams to continue business-as-usual despite multiple global supply chain disruptions.

Information Security

With our expanding global footprint and increased dependence on cloud-based software and secure IT infrastructure, we identified the need to create a dedicated role to oversee cybersecurity. Nilesh Kumar took on this role as Chief Information Security Officer (CISO). The CISO's primary responsibility is to strategically and systematically develop and implement an information security program that includes policies, procedures and technology solutions to protect LanzaTech's systems and data from evolving cyber threats.

"At LanzaTech, we thrive on change and are able to adapt to the situation at hand. Whether faced with a global pandemic or increased cybersecurity threats, we remain ready to support our remote workforce and maintain business operations through deployment of cloud-based platforms and enhanced cybersecurity measures."

Nilesh Kumar

Chief Information Security Officer



Image L-R: Hazim Yousif, Senior Process Analytical Scientist; Aimen Lateef, Associate Bioprocess Engineer



LanzaTech