
**Sustainability
Report 2019**

Lonza



Safety and sustainability are critical considerations in how we plan, execute and evaluate every aspect of our work.



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Our Commitment to Sustainability



Albert Baehny
Chairman of the Board of Directors
and Chief Executive Officer
ad interim

Dear Stakeholders and Friends of the Company

Welcome to the Lonza Sustainability Report 2019. The first report was developed in 2018 and helped the business to strengthen its strategic focus and operations around how we uphold and implement sustainable practices and report in line with standards defined by the GRI guidelines. As a global business, with a presence in a wide variety of markets and regions, we set standards and requirements at a central level and support our sites to ensure we can achieve our sustainability targets.

Safety and sustainability are critical considerations in how we plan, execute and evaluate every aspect of our work. As a business that works to advance human health, it is also important that we take care of the environment, our communities and our own people. This enables us to build trust with all our stakeholders, including our employees, customers and investors.

The safety of our people is vital to our ethical standing and operational effectiveness. This is why we strive to have zero accidents or incidents across our sites. We work in preventing accidents and incidents by involving everyone in hazard reduction, improving processes and upholding safe working practices.

Managers in all our locations are expected to maintain safety, encourage employee engagement and to take corrective actions, which improve the working environment. Every site is developing a roadmap to achieve energy, CO₂ and waste targets, and becoming more actively involved with their local communities. We measure our success not only by revenue and profit, but also by how much we are able to give back to our people and communities, as well as protecting our environment.

We hope you find the information in this report useful and we encourage feedback on how we can improve our approach to sustainability in the future.

Our Policy

Compliance and Integrity

We ensure that regulatory compliance, integrity and ethical conduct are the foundations in every place we operate.

Vision ZERO

We continually improve our systems and aspire to ZERO incidents, injuries or emissions.

Our People

We develop our employees by helping them grow. We provide safe workplaces, care for employees' well-being and foster their involvement and participation.

Our Environment

We improve our environment footprint by continually reducing energy, water and material demand per unit.

Value for Society

We create value for society by innovating science-based solutions along the Healthcare Continuum® to develop the medicines and consumer products of tomorrow. We engage in the communities where we operate.



Introduction

As part of our overall sustainability commitment, we foster transparency and reporting in line with the Global Reporting Initiative (GRI) Standards, which represent the accepted industry practice for tracking performance on a range of economic, environmental and social indicators.

To strengthen our commitment to sustainability and to better share best practices across the entire company, in 2018, a Sustainability Council was established by our Executive Committee. The cross-functional Council is headed by the Lonza Group General Counsel and includes members from Legal, Environment Health & Safety, Human Resources, Investor Relations and Communications. It directly interacts with the Executive Committee and the Board of Directors. The ultimate responsibility for all sustainability-related matters lies with the Chairperson of the Board. The Council's objectives are to:

- Establish and communicate sustainability goals and provide guidance and support to those Lonza teams engaged in sustainability initiatives
- Encourage sharing of already-established best practices across businesses and functions throughout Lonza
- Focus attention on and provide leadership for driving sustainability at Lonza
- Serve as a link and source of dialogue between internal networks in Lonza and outside stakeholders

The 2019 Sustainability Report provides insights into our commitments and performance regarding the most relevant sustainability topics for us and our stakeholders. This report builds upon the work shared in the 2018 Sustainability Report, including the materiality assessment, which was done to prioritize the themes, initiatives and focus areas that best support sustainable development from stakeholder and company perspective. We also continue to strive for alignment with the United Nations (UN) Sustainable Development Goals (SDGs), which are relevant to our business.

Lonza and the UN Sustainable Development Goals

[The UN Sustainable Development Goals \(SDGs\)](#) comprise a broad range of sustainable development topics, including alleviating poverty and hunger, improving health and education, reducing inequalities, promoting responsible consumption, combatting climate change and protecting natural resources.

For many years our products and services have helped our customer industries to address global megatrends, such as the need for healthy and abundant food, clean water, affordable medicines and healthcare, and growing global demand for enhanced hygiene, health and well-being.

We have assessed the 17 SDGs and identified eight that we consider the most relevant to our industry, operations and sustainability focus areas. As a manufacturer mainly serving industrial customers, we are part of a bigger network to advance towards these goals. The eight relevant SDGs are listed below. We have tied each material topic from the Materiality Assessment to a relevant SDG.



Our crop protection solutions offer highly effective products which improve crop yields and reduce farmers' needs for pesticides, herbicides or water.



In the Lonza Pharma Biotech & Nutrition business, our vision is to enable our customers to meet some of the greatest challenges in patient treatment with products, services and cutting-edge technologies that help save, extend and enhance lives. Our Consumer Health & Nutrition business provides advanced nutritional ingredients used in a broad spectrum of products, from energy drinks and dietary supplements to sports nutrition. Our Home & Personal Care business provides certified organic and natural cosmetic ingredients as well as other skin and hair-care treatments that help people feel and look their best.



We have established several partnerships with universities worldwide. We also engage in sponsoring activities with educational institutions. For example, Lonza India has continuously supported a local school by constructing and renovating school buildings and by setting up e-learning facilities, a computer lab, a science lab and a water cooler.



We gain competitive advantage and strength by having a diverse global workforce, where colleagues are given equal opportunities to excel and advance regardless of race, gender, sexual orientation or religion. In addition to offering equal pay for equal work, we provide flexible workplace policies that acknowledge the need for a healthy balance of work, home life and personal work styles.



We recognize that our people are the cornerstone of our success. We empower our employees to excel, to broaden their skills and business experiences, and to pursue their desired career paths and goals. When we prosper, so do our employees, their families and communities, our local and regional suppliers and many others.



We continuously invest in innovation while further improving our operational excellence. We have a robust global supply chain and state-of-the-art manufacturing and research facilities. We are also the pioneers of vital, game-changing technologies, including gene-editing systems and automation. In 2019, CHF 188 million were invested in the research and development of leading manufacturing technologies.



Within our manufacturing operations, we strive to continuously diminish our impact on the environment, conserve energy and natural resources and reduce our carbon footprint and waste. This commitment includes sourcing materials from responsible, sustainable producers that meet strict compliance standards.



In 2018, we set new intensity targets for energy consumption, carbon emissions and waste generation until 2030. In 2019, we achieved a 7% reduction in greenhouse gas emission intensity from routine processes compared to 2018. Going forward we will continue to strive to improve our energy and resource efficiency and to reduce our carbon footprint to levels required by the Paris Agreement.

Lonza Material Topics and Relevant Sustainable Development Goals

Material Topic	SDG
Quality and Reliability	2, 12
Economic Performance	8
Environmental Compliance	12
Socioeconomic Compliance	12
Customer Satisfaction	3
Anti-Corruption	8
Protection of Human Rights	5, 8
Occupational Health and Safety	3, 8
Employee Engagement	5, 8
Innovation	9
Waste and Recycling	3, 12
GHG Management	3, 12, 13
Non-Discrimination	5, 8
Customer Health and Safety	3, 12
Energy Conservation and Efficiency	9, 12, 13
Talent Management	4, 8

About Lonza

Lonza

Lonza Pharma Biotech & Nutrition (LPBN)

Contract Development and Manufacturing Organization (CDMO) Service Businesses

- Small Molecules
- Mammalian and Microbial
- Cell & Gene Technologies

Product Businesses

- Bioscience
- Capsule Systems
- Nutritional Ingredients

Lonza Specialty Ingredients (LSI)

Microbial Control Solutions (MCS)

- Crop Protection, Wood Protection,
Material Protection
- Home & Personal Care, Professional Hygiene
- Paints & Coatings

Specialty Chemical Services (SCS)

- Composites
- Custom Development and Manufacturing
Organization (CDMO)
- Performance Chemicals & Intermediates

2019 Sales

CHF 4.2 bn

2019 Sales

CHF 1.7 bn





Our Organization

Founded in Switzerland in 1897, we are one of the world’s leading and most-trusted suppliers to the pharmaceutical, biotech and specialty ingredients markets. We work together to develop medicines and products that improve and save lives.

We strive to minimize our impact on the environment, conserve energy and natural resources, and help to improve the quality of life. The goal of our Vision Zero initiative is to reduce workplace accidents and injuries, environmental incidents, manufacturing process incidents and transportation incidents. Through these and other safety, quality and human resource initiatives, we strive to be the place to go, stay and grow.

More information on our business and markets is provided in the [Our Businesses section of our Annual Report](#).

Our Strategy

Our strategy in 2019 was to increase focus on the healthcare related businesses and commencing the carve-out of the Specialty Ingredients segment. Over the course of the year, we worked diligently on the carve-out and on reviewing the Group strategy to refocus on accelerating the growth and development of our Pharma Biotech & Nutrition offering.

Investing in Future Growth in Lonza Pharma Biotech & Nutrition (LPBN)

LPBN continues its accelerated growth trajectory, with an expanding portfolio of customers and offerings. Its focus remains on providing healthcare development and manufacturing solutions, which enable its global customers to deliver advances in global health.

As an early entrant to the contract development and manufacturing organization (CDMO) market, LPBN has captured and built customer relationships and established a positive reputation for quality, reliability and consistent delivery.

LPBN has demonstrated its capabilities to meet increasingly complex and integrated customer’s needs by developing its offerings (added fill and finish clinical capabilities), geographic reach (US and China) and industry (microbiome).

LPBN is well-positioned to increase its competitive advantage through strong investment in growth projects. These include capacity expansions across multiple technologies: complex molecules, antibody drug conjugates, microbiome and cell and gene technologies.

Delivering a Customer-Centric Configuration in Lonza Specialty Ingredients (LSI)

Over the course of 2019, LSI worked to develop the structure of its business to more accurately reflect the markets it serves. The business is now set up to be more accessible to customers, with a leading portfolio of Microbial Control Solutions (MCS), supported by a division dedicated to Specialty Chemicals Services (SCS).

LSI operates in an attractive niche market within the Specialty Chemicals industry and has expanded beyond its core market of microbial control actives, into microbial formulations and the much larger market of formulation additives. LSI has the ambition to return to growth and to increase its CORE EBITDA margin to above 20% by 2022. The main growth driver will be the asset-light Microbial Control Solutions business. LSI aims to extend its digital capabilities – not only to increase internal efficiency, but also to develop new business models and enhance customer engagement.

Growth will be supported by LSI's strength in innovation, and its capability in fulfilling customer needs in an increasingly complex regulatory environment. As part of its approach, LSI continues to focus on "out-of-house" innovations, for instance with investments through its Venture Fund with Prolog, or through targeted acquisitions.

The business is now working to create closer connections to customers with a refreshed creative visual identity and a marketing campaign that is designed to highlight the importance of customer relationships and the value of long-term partnerships.

Our Governance

In accordance with the law and the Lonza Articles of Association, the Board of Directors is the supreme management body of the Group. The Board of Directors defines the strategic direction and is responsible for the ultimate management of Lonza, as well as the supervision of the persons entrusted with Group management.

The members of the Executive Committee are appointed by the Board of Directors. Our Executive Committee performs the duties assigned to it by the Board of Directors under the terms of the Regulations Governing Internal Organization and Board Committees. It is responsible for managing Lonza worldwide and for implementing policies and strategies as defined by the Board of Directors.

All sustainability-related matters sit with the Chairperson of the Board. Sustainability includes environmental, social and governance-related matters of importance for us and our stakeholders. A sustainability council headed by the Lonza Group General Counsel and Company Secretary manages identified material topics (as shown in the Materiality Matrix) and is responsible for sustainability reporting. The Head of Corporate EHS&S (Environmental Health, Safety and Sustainability) and the Corporate EHS&S team are responsible for the EHS strategy and the implementation and oversight of the Safety and Sustainability Policy, and report to the Lonza Group General Counsel.

The sustainability report is discussed by the Nomination and Compensation Committee (NCC) and Audit and Compliance Committee (ACC) in accordance with our financial reporting. It is ultimately approved by the Board of Directors.

Further details on Corporate Governance and the Group Structure can be found in the [Corporate Governance section of our Annual Report](#).

Precautionary Principle or Approach

We apply the precautionary principle within the risk management framework. Risk management is a process applied from a shop-floor level up to the top risks for the whole company. Selected elements include:

- Job safety analysis, technical safety reviews of equipment

- Process hazard analysis, audits and inspections
- Site risk analysis, including fire safety, natural risk, interruption risk
- Supply chain risk analysis
- Enterprise risk management

Site Integrity and Security is a highlighted theme in our Enterprise Risk Management (ERM), in the [Financial Statements](#) section of our Annual Report.

Key Impacts, Risks, and Opportunities

The Enterprise Risk Management (ERM) program is a critical platform for our global organization and business as it provides a mechanism and structure for prudently addressing risk responsibility and management in every organization. Our ERM process is performed in four steps:

- Step 1: Identification (through risk workshops with Executive Committee members and their leadership teams), assessment and assignment of risks
- Step 2: Consolidation, review and prioritization of risks
- Step 3: Presentation of consolidated risk overview to the Executive Committee and Board of Directors
- Step 4: Follow-up on high-priority risks.

Through this process, we identify thematic risk categories and each is assessed according to its probability of occurrence and its negative impact on the Group:

- The probability of occurrence is assessed for the period until year-end 2021, with a risk range from unlikely to highly probable.
- Any potential negative effect of a risk is assessed according to its impact on our annual EBIT, reputation and operations.

This process enables us to develop a specific set of risk themes along with top areas of concern and high-level mitigation actions, linked to activities of functional, business and operations teams. Year-on-year dynamics are captured by classifying risk themes as increasing, decreasing, new and continuing. The risk portfolio is discussed annually with the Executive Committee and the Board of Directors. Some of the trends influencing the industry are viewed as opportunities rather than risks for healthcare and hygiene companies like ours. Current opportunities include aging societies, growing populations and the increasing need for safe and abundant food.

Our Workforce

As a successful company, we are an attractive employer for our 15,468 employees worldwide and paid a total of CHF 1,815 million in salaries and social benefits in 2019. We value a solid education and further training and equal opportunities for all employees. At a local level, we ensure that fair and competitive compensation is paid to employees, as well as other benefits providing a total rewards package which supports employee engagement and

work-life balance. Lonza actively fulfills country specific equal pay requirements and reviews on a regular basis the pay equality throughout the population addressing any identifies issues. We monitor turnover and absenteeism across the network with a specific focus on key sites. This information is provided on a quarterly basis to the Board of Directors. In 2020, a global system will be launched to allow comprehensive time management monitoring.

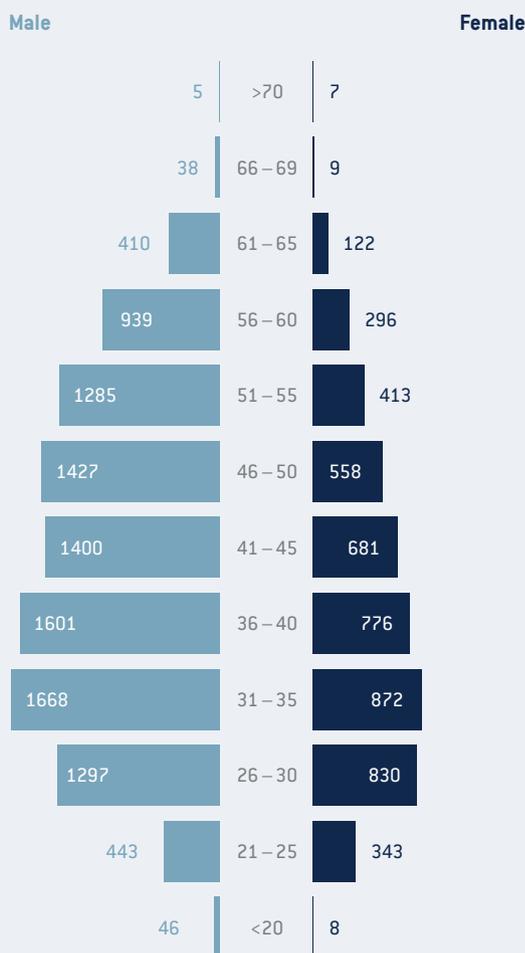


Our Workforce

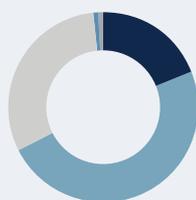
		2018	2019**
Gender	Male	10,632.8	10,558.0
	Female	4,742.4	4,915.0
Region	Americas	5,526.0	5,028.0
	EMEA	6,970.0	7,481.0
	APAC	2,879.0	2,964.0
Hires*		2,455.0	2,435.0
Hires by Region*	Americas	1,031.0	870.0
	EMEA	1,008.0	1,152.0
	APAC	416.0	414.0
Turnover (%)		11.9	12.0
Turnover by Region (headcount)	Americas	769.0	803.0
	EMEA	510.0	655.0
	APAC	288.0	330.0

* Including Acquisitions
** Excluding Water Care business
Excluding contingent workers and temporary employees

Broad Balance Across Age Groups



Geographic Diversity



■ APAC
■ EMEA
■ North Americas
■ South Americas
■ Central Americas

Lonza is largely based in EMEA and due to recent acquisitions has increased presence in APAC and the Americas



32%
Female Employees



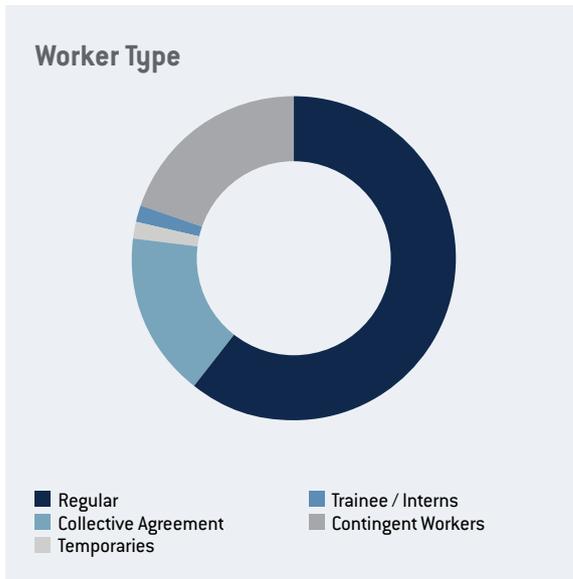
33%
Female Board Members



38%
Female New Hires



44%
Female Business Unit Heads



Employee Ethics and Compliance

The values and principles of the updated Lonza [Code of Conduct](#) were approved by the Board of Directors in 2017. The Code of Conduct is now available in 14 languages to all our employees as well as the public. An interactive Code of Conduct is available with additional details for our employees, which includes easy-reference links to key information. Employees are required to take an annual Code of Conduct training, which includes practical examples and an integrity pledge certification. Additionally, employees have to pass tests in online courses, dealing with topics addressed by the Code of Conduct, for example anti-bribery, competition law and conflicts of interest. All employees explicitly consent to uphold the values expressed in the Code of Conduct.

Our Ethics & Compliance Group provide guidance in recognizing, understanding and complying with the laws and ethical standards that govern our business activities. This is supervised by the Audit and Compliance Committee of the Board of Directors. In addition, we have a “whistleblower” hotline (known as “Lonza Ethics Hotline”), operated by an external company. The Lonza Ethics Hotline ensures that concerns can be raised anonymously, if preferred and where allowed by law. All concerns and reports provided to the hotline are, where warranted, investigated by our Ethics & Compliance Group and are finally reported to the Audit and Compliance Committee.

Our Supply Chain

Drawing on a broad global base, the Procurement team plays a vital role in cost-effectively providing raw materials, services and other support to our manufacturing, research and development sites worldwide.

Together with stakeholders from the different businesses and functions, Procurement developed solid approaches for spend categories across a diverse range of strategic raw materials and services. The team enhanced data quality, analytics and dashboards to track and communicate progress.

Ensuring Seamless Supplies

The Procurement team faced various challenges in 2019. Newly established trade barriers started to have an impact on our global supply chain. In addition, tightened environmental policies in China created knock-on effects on global commodities markets. Demand and supply imbalances resulted in an unfavorable impact on raw material prices.

We responded to such challenges appropriately and effectively – and we managed to step up our level of excellence in Procurement during the year. In addition, the team navigated several unexpected force majeure events affecting major suppliers. Those events and related geopolitical challenges encouraged us to sharpen our risk management and mitigation processes and tools.

Value Chain and Supply

External supplies are managed by local procurement teams; the central procurement team is structured around global spend categories. They manage spend aggregation and market positioning in the applicable sourcing markets, contract top suppliers and oversee associated supplier relationships.

Our breadth and diversity of businesses mean that the supply base comprises approximately 27,000 suppliers. The complexity of roughly 3,000 direct material suppliers range from cracker feedstock for our Visp site, basic chemicals, or naturally derived materials such as gelatin, to high-end systems and consumables for biopharmaceuticals, or specialized components for gene and cell therapy production. 80% of our spend originates from European or North American supply locations, the remainder from locations across the world.

Sustainability in Procurement

By engaging with stakeholders, we have been able to identify gaps, future trends and requirements regarding sustainable sourcing and supplier risk assessment. The resulting procurement processes include:

- Enhanced approaches for sustainable procurement
- Voluntary membership of sustainable sourcing platforms to engage with our industries and enhance our capabilities
- Maintain a systematic and integrated supplier risk management system

We are an active member of the Pharmaceutical Supply Chain Initiative (PSCI). PSCI is an association of pharmaceutical, biotech and medical device industries. Its aim is to establish and promote responsible practices to improve ethics, labor, health,

safety and environmentally sustainable outcomes, as well as to improve supplier capability for the members' supply chains. This active membership enhances the firm's capabilities and processes in sustainable supply chain management.

In addition, our procurement department established a comprehensive and integrated supplier risk-management process to support sustainable business growth by capturing opportunities and mitigating supply risk.

The following key principles define the framework using ERP automation:

- Key supplier risk assessment and management by global procurement experts
- Integrating risk assessments into business processes to enable and support business continuity
- Using criteria and risk register for scalable assessments of materials and suppliers
- Monitoring and ranking supply risks, including risk mitigation and implementation

Due Diligence

As part of the commitment to sustainable development the [Supplier Code of Conduct](#) sets high standards for our suppliers and provides a framework to evaluate their practices. It is

referenced in the Purchase Order and contract received by each of our suppliers.

In addition to carefully selecting and evaluating suppliers for security of supply and specifications of materials and services, we monitor and audit our suppliers to improve performance and relationships. Included within this monitoring system are the principles of the Supplier Code of Conduct.

We operate an automated anti-bribery and anti-corruption diligence, monitoring for high-risk vendors. This approach is run by our Ethics & Compliance Group and integrated into the procurement and vendor management process through our ERP system (SAP). Relevant third parties are blocked in SAP until the diligence process is completed.

The process includes real-time corruption, trade sanctions, and adverse media screening for all third-party vendors with heightened diligence for higher-risk third parties. The system includes mandatory completion of a diligence questionnaire in addition to Anti-Bribery and Anti-Corruption training. Third parties with higher risk profiles are then further reviewed and assessed by members of the Ethics & Compliance Group.

Our third parties are continuously monitored and, as relevant, full due diligence is completed on a two-year automated cycle.

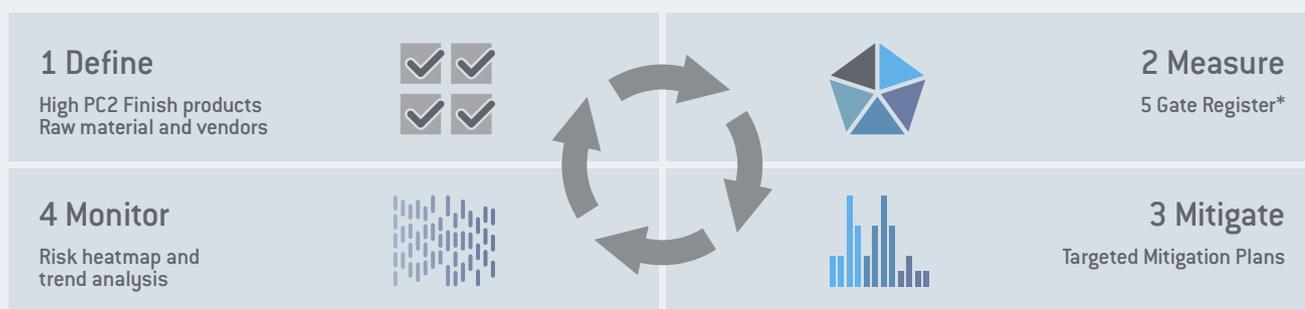
Supply Risk Management

A step closer to digital procurement analytics

What? Our Aspirations and Objectives



How? A Global Risk Register with Systematic Methodology



* Supply Market Risk, Country Risk Natural Disaster, Supply Performance, Validity Date of Q-Info Record, Number of Valid Q-Info Records



Membership of Associations and External Initiatives

Lonza Group Ltd joined the [United Nations Global Compact \(UNGC\)](#) in 2009. We are committed to aligning our businesses and operations with the universally accepted principles of sustainable development. This encompasses the areas of human and labor rights, anti-corruption and environmental sustainability. Our company annually reports to the UNGC on progress in implementing the UN Global Compact's Ten Principles.

Established in 2006, the [Pharmaceutical Supply Chain Initiative \(PSCI\)](#) is a non-profit business membership organization that we joined in February 2019. The PSCI is a group of pharmaceutical and healthcare companies who share a vision of better social, environmental and economic outcomes in members' communities. This includes:

- Fair and safe work conditions and practices
- Responsible business practices
- Environmental sustainability and efficient use of resources

The purpose of the initiative is to bring together the pharmaceutical industry to define, implement and champion responsible supply chain practices. It has developed a set of principles that

set the guidelines for a more sustainable supply chain. We have embedded these principles in our Supplier Code of Conduct and encourage our suppliers to follow them.

We are a member of various associations in the biopharmaceutical, chemical and personal care industry sectors, as well as in the wider business community. Associations may serve a variety of purposes such as exchanging best practice, aligning on public policy issues or collaborating on advocacy activities. The list below includes some of those associations:

- [Scienceindustries](#)
- [SwissHoldings](#)
- [Cefic, the European Chemical Industry Council](#)
- [Swiss Biotech Association](#)

Examples from Lonza Specialty Ingredients Segment:

- [Microbial Control Executive Council](#)
- [Western European Institute of Wood Preservation](#)
- [UK Timber Trade Federation](#)
- [Wood Protection Association](#)
- [American Coatings Association](#)

[North American Center for Polyurethane Industry](#)
[European association of flexible polyurethane foam blocks manufacturers](#)
[Independent Lubricant Manufacturers Association](#)
[American Cleaning Institute](#)
[Personal Care Products Council](#)
[Society of Cosmetic Chemists](#)
[Nordic Soap, Perfume, Cosmetic and Detergent Association](#)
[Cosmetic Executive Women](#)
[Association of Non–Woven Fabrics Industry](#)
[American Chemistry Council](#)
[Western Plant Health Association](#)
[Crop Life America](#)

Examples from Lonza Pharma Biotech & Nutrition Segment:

[Biophorum Operations Group](#)
[Drug, Chemical and Associated Technologies Association](#)
[Alliance for Regenerative Medicine](#)
[International Society for Cellular Therapy](#)
[International Society for Stem Cell Research](#)
[International Society for Pharmaceutical Engineering Association A3P](#)
[Parenteral Drug Association](#)
[Rx–360 Consortium](#)
[European QP Association](#)
[United Natural Products Association](#)
[Natural Products Association](#)
[American Herbal Products Association](#)
[American Botanical Council](#)
[Organic Trade Association](#)
[French National Union of Nutritional Supplements](#)
[Belgian Federation for Food Supplements, dietary and organic products](#)
[Nature and Health Products Netherlands](#)

Our Stakeholders

We have identified relevant stakeholders, which may have a vested interest in our performance and can influence the direction of the company directly or indirectly. The stakeholder groups identified as relevant to us are shown below. We perceive inter-governmental bodies like the United Nations as authorities and the respective agreements between states as a guideline for the whole industry. The Sustainable Development Goals guide and direct our corporate goals and approach to sustainability.

Stakeholder Identification Process

As part of the sustainability reporting process, the main stakeholder groups were identified and categorized according to how we may impact the stakeholder, and how the stakeholder may impact us. Results were verified with different entities within Lonza (Management, Business Units, Human Resources, Legal, Investor Relations and Communications), alongside external benchmarks.

The most relevant stakeholder groups (or their proxies) were involved in the materiality process to better understand the requirements and value these specific stakeholder groups perceive as relevant to our activities.

Approach to Stakeholder Engagement

Our entities regularly engage with their relevant stakeholders on a local level, though not in a formalized manner guided by any corporate requirements. We also remain active on several social media channels to receive feedback from individuals or groups.

Suppliers

Customers

Group Management
and Board of Directors

Direct Influence

Employee
Associations

Lenders

Future
Talent

Employees

Shareholders
and Investors

Regulators

Local
Communities

Business

Financial
Markets

Regulatory
Bodies

Society

Associations
and Competitors

Rating Agencies
and Analysts

Government/
Authorities

Scientific
Community

Consumers
and Patients

Proxy
Advisors

NGOs

Indirect Influence

Media/
General Public



Lonza Corporate Social Media Presence 2019



In 2019 we continued to increase our social media presence. The numbers above show the total current number of followers for each corporate social media platform as of 1 January 2020 and the increase in followers since January 2019.

As part of the sustainability reporting process in 2018, we specifically engaged with selected internal and external stakeholder groups directly or via internal proxies. The views of the following stakeholders were included in the materiality survey: employees, customers, academia, financial analysts, future talent, media and our management and Board.

An annual meeting with the European Works Council (EWC) involving senior leaders took place in Visp and included an update and exchange on the business and support network of the EWC. There are also ad hoc information sessions with EWC and local representatives for the EWC, depending on topic and scope.

Around 30-50 regular exchanges took place with shareholders, key proxy advisors and rating partners around corporate governance, executive compensation developments, sustainability and other relevant topics. There is also regular contact with customers, much of which takes place at trade fairs.

The materiality survey provided a mechanism to engage with relevant stakeholders and to capture their input on topics to be reported upon, actively managed or simply monitored. All of those topics were addressed in the cross-functional Sustainability Council and shared with the respective departments.

The publication of our first Sustainability Report in 2018 triggered further discussions with stakeholders. The report covered highly material aspects. Aspects rated moderate and low are not necessarily covered in the report but will be monitored on a regular basis. Newly identified issues will be analyzed, prioritized and integrated based on their relevance. Our ongoing dialogue with stakeholders, especially with the sustainability experts of financial and proxy advisors, helps us refine our scope and identify other material topics.

Our Reporting Focus

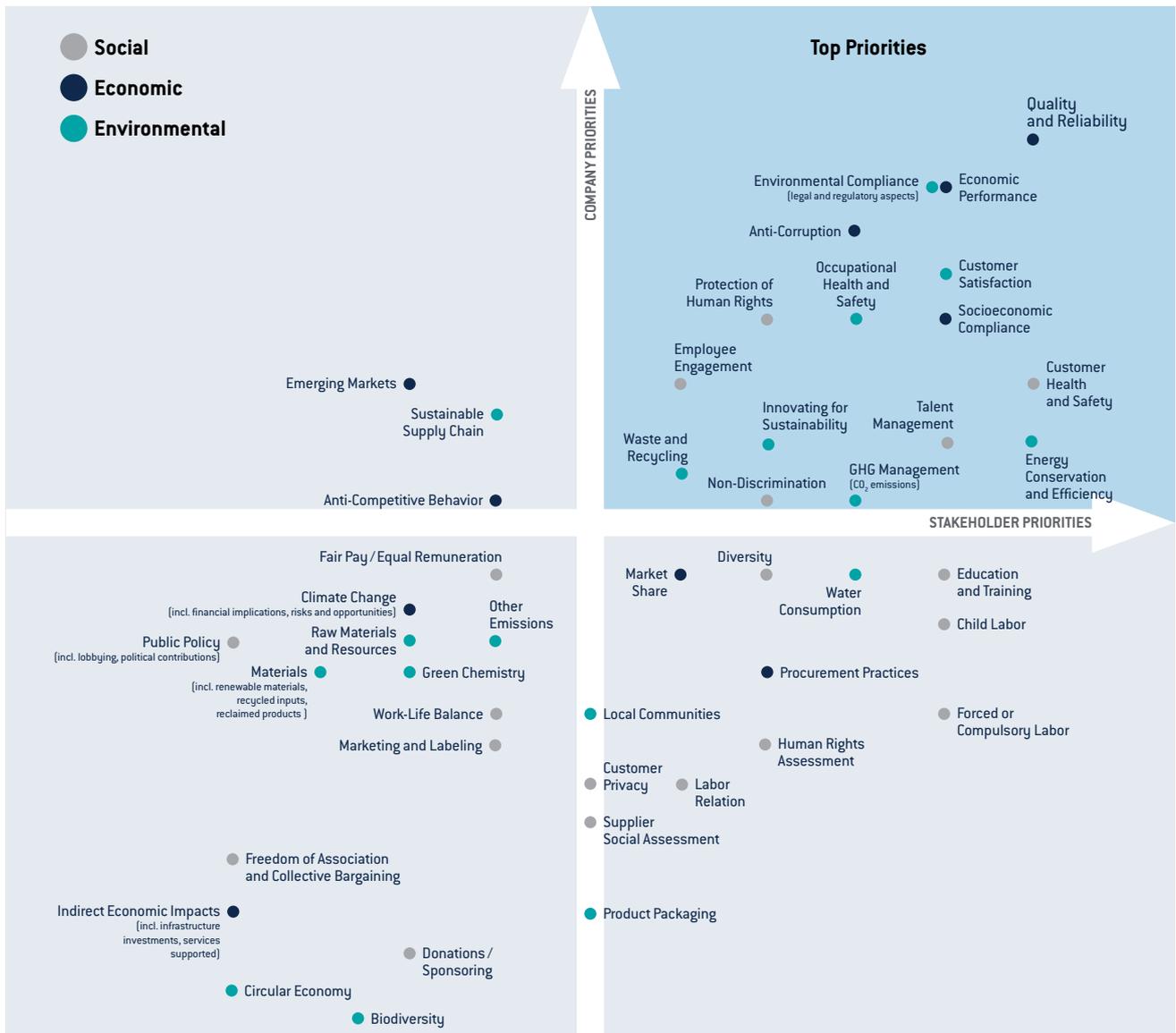
Building on stakeholder identification, we involved them to perform an analysis of material topics for sustainability reporting. The analysis focused on a broad range of potentially material topics. This analysis included the topics listed in the GRI, as well as others that were considered relevant to the industry. The materiality mapping, as shown here, was based on:

- The main sustainability topics raised by our stakeholders
- The relevance for our business
- Potential reputational impacts
- Potential to influence or impact the topic
- Significance (extent) of the impact to us

The priority evaluation engaged the identified stakeholders in a survey to understand their perspective; our priorities were assessed and confirmed by the Sustainability Council. Group Management and the Board of Directors also validated the materiality results.

The process allowed us to identify the top social, environmental and economic priorities (see chart below).

Unless otherwise stated, the reporting boundaries for environmental data include the facilities for which we have operational control, own either the facility or significant relevant equipment and where data are readily available and representative. Facilities outside the reporting boundaries are smaller-sized leased facilities, laboratories, warehouses and office spaces with insignificant energy consumption.



About the Reporting

The reporting period is the calendar year 2019. This is our second sustainability report following the principles of the GRI. We expect to continue to report on an annual basis. Our GRI Report 2019 has not been externally assured. This report has been prepared in accordance with the GRI Standards: Core option.

Contact Point for Queries



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List of Material Topics

The process to define the content of the report identified 16 topics along the value chain as material for us globally. These were placed into economic, environmental and social categories.

Economic

- Economic Performance
- Anti-Corruption
- Quality and Reliability
- Customer Satisfaction

Environmental

- Energy Conservation and Efficiency
- GHG Management
- Waste and Recycling
- Environmental Compliance
- Innovation

Social

- Occupational Health & Safety
- Non-Discrimination
- Protection of Human Rights
- Customer Health & Safety
- Socioeconomic Compliance
- Talent Management
- Employee Engagement

Economic

For more than 120 years, we have generated sustainable value for all our stakeholders – from our customers and suppliers to our employees and their families; from the communities in which we operate to our global shareholders. In recent years, we have continuously worked to improve our economic performance and value, as well as protecting our business by improving our approach to security, quality and reliability.

¹ IFRS 16 accounting adjustment on leases had a positive CORE EBITDA impact of CHF 33 mn in 2019 (60 bps positive CORE EBITDA margin impact), offset by costs related to the divestment of the Water Care business and carve-out of Specialty Ingredients (50 bps negative CORE EBITDA margin impact). IFRS Results – Continuing Business: EBITDA – CHF 1,525 mn; EBITDA Margin – 25.8%

27.4
CORE EBITDA MARGIN¹ IN %

5.9bn
SALES IN CHF

² IFRS 16 accounting adjustment on leases had a positive CORE EBIT impact of CHF 2 million in 2019 (3 bps positive CORE EBIT margin impact), offset by costs related to the divestment of the Water Care business and carve-out of Specialty Ingredients (50 bps negative CORE EBIT margin impact). IFRS Results – Continuing Business: EBIT – CHF 972 mn; EBIT Margin – 16.4% better comparison across years.

1.6bn
CORE EBITDA¹ IN CHF

1.2bn
CORE EBIT² IN CHF

28.5
CORE RONO A IN %

9.1
ROIC IN %

Economic Performance

We strive to focus on innovative, value-enhancing products and services for our customers, which help to deliver therapies, treatments and ingredients which advance human health and contribute to a safe living environment.

We continue to focus on our sustainable growth trajectory while optimizing our business and product portfolios and making targeted investments. The Mid-Term Guidance 2022 for our continuing operations (excluding the divested Water Care business unit) is the following:

- Sales CHF 7.1 billion
- CORE EBITDA margin 30.5%
- CORE RONOA 35%
- Double-digit ROIC

In 2020, we will focus on executing our growth projects in another major investment year, completing the carve-out of our Specialty Ingredients segment and reviewing future plans. The investment in growth projects in LPBN is expected to remain at 2019 levels in order to further expand our asset and technology platforms for future growth. We have also factored into our outlook the continued macroeconomic uncertainty and some potential ongoing headwinds in the cyclical parts of Lonza's Specialty Ingredients businesses.

Concurrently, we will work to strengthen a culture of shared values, collective accountability, commitment and transparency. We will also increase our efforts to ensure a constant pipeline of talent to develop as future company leaders. Finally, we will establish clearer environmental, social and governance (ESG) targets and action plans for implementation in 2021.

To grow sustainably, we focus on the following key internal initiatives:

- Excelling in quality, safety and sustainability – “Vision Zero”
- Improving efficiency and productivity through automation and digitalization
- Consolidating our global network of assets and expanding our footprint outside North America and Europe
- Constantly innovating and investing in targeted research and development initiatives

Please consult the [Corporate Governance](#) section of our Annual Report for information regarding overall company management and oversight.

Direct Economic Value Generated and Distributed

We strive to create value for all of our stakeholders – our shareholders, customers, employees, suppliers and communities. We distribute our derived economic value to various stakeholders through a variety of streams. This includes governments through taxes, employees through compensation and benefits, shareholders through dividends, suppliers and service providers through raw material and service prices, and society through taxes and local community projects. Part of the earned value is retained in the company for further growth through innovation, targeted investments or bolt-on acquisitions. Please consult Statement of Value Added in the [Financial Statements](#) section of our Annual Report.

Gross and Net Value Added 2019

(results represent total Lonza Group, excluding Water Care)

Item	Million CHF
Total income	6,068
Gross value added (deduction of services and goods bought from third parties)	3,365
Net value added (deduction of depreciation, amortization, and impairment)	2,809

Net Value Added Flows to the Various Stakeholders and to Lonza 2019

Item	Million CHF	%
To employees	1,815	64.6
To the company	558	19.9
To shareholders	206	7.3
To public authorities, taxes	111	3.9
To lenders	120	4.3
To non-controlling interests	-1	-0.04
Total	2,809	100

Anti-Corruption

We aim to conduct our business in an honest, fair and ethical manner. We take a zero-tolerance approach to bribery and corruption and we are committed to acting professionally, fairly and with integrity at all times. Furthermore, the business implements and enforces effective systems to help prevent bribery and corruption. We uphold all applicable anti-bribery and corruption laws.

We have a dedicated Ethics & Compliance Group which is charged with monitoring and promoting compliance with anti-bribery and anti-corruption laws. In addition, we operate an automated interface for third party due diligence and monitoring.

The Lonza Ethics Hotline provides a mechanism for employees and others to report potential violations of the Code of Conduct, our policies or procedures (including those related to anti-corruption), or applicable laws or regulations. Such reports may be made anonymously where allowable by law. Those found responsible for any violations may face disciplinary action, which may include termination of employment.

Operations Assessed for Risks Related to Corruption

We are exploring periodic risk assessments to identify business areas and geographies of anti-corruption and bribery risk and implement mitigation steps where required. A global risk assessment was completed in 2017/2018, which focused on antitrust, trade and anti-corruption. A survey of our sites regarding anti-corruption, socioeconomic and environmental compliance has been completed in 2019 and resulted in no observations or risks.

Communication and Training on Anti-Corruption Policies and Procedures

All employees have access to our Anti-Corruption and Anti-Bribery Policy via our intranet. New employees receive an induction on anti-corruption and anti-bribery via an online training module. Anti-corruption and anti-bribery are also covered in our Code of Conduct and in the annual Code of Conduct training required of all employees.

Additionally, suppliers that enter into our standard supply agreement commit to our Supplier Code of Conduct, which sets out commitments to working against corruption and bribery. The Supplier Code of Conduct applies to both our suppliers and to any subcontractors or other third parties that a supplier may engage in the performance of its contractual obligations. Currently, suppliers are instructed to implement internal measuring procedures, tools and indicators required to guarantee adherence to the Supplier Code of Conduct principles. Suppliers are encouraged to report any violations by sending an e-mail to compliancegroup@lonza.com or by using the [Lonza Ethics Hotline](#).

The “Did you know?” internal articles series uses visuals that draw attention to inform all Lonza employees about various topics contained in our Code of Conduct.

Did you know?

The 2019 Lonza Code of Conduct Training and General Counsel Awards are coming soon...



Focus on the Code

Improving Business Security

Security is a key priority for our business: to ensure availability of our critical systems and to protect our information, including the information that is entrusted to us by our customers and partners.

The Lonza IT Security Department is responsible for regularly testing our systems for potential security weaknesses and for ensuring appropriate technical, procedural and organizational safeguards are in place. It is also responsible for providing training to our employees and contingent workers on how they contribute to our information security. The IT Security team's activities in 2019 comprised:

- assure appropriate governance and policy structure, based on international standards
- implementing a robust, user friendly and scalable security architecture, solutions and services
- decreasing possible business disruption and empower associates to work securely

The strategy of Lonza IT Security included implementing holistic, preventive, detective and reactive IT Security measures, in line with the relevant risk level. It also provides risk assessments, contributes to enterprise risk management, defines security and IT control requirements for projects and risk remediation measures, and it aims to ensure that we meet applicable laws and regulations in collaboration with the Legal and Quality Assurance departments.

Recent surveys indicate that more than 90% of our employees are aware of how to store and secure documents, as well as understanding their critical role in protecting our information.

Measures and Activities to Enhance IT Security

	<p>Preventive Measures</p>	<ul style="list-style-type: none"> • Enhanced Technical Standards • Various countermeasures in place to address modern threats
	<p>Incidence Response</p>	<ul style="list-style-type: none"> • Data Breach Response Plan • Security Incident Response Plan • Active Security Operations Centre monitoring and Response team
	<p>Testing</p>	<ul style="list-style-type: none"> • Penetration tests of our critical systems • Phishing simulations and other active tests • Compliance testing and assessments
	<p>Training</p>	<ul style="list-style-type: none"> • Security Fundamentals • Data Privacy • Periodic Awareness Updates, E-trainings, simulated Phishing and On-site trainings
	<p>Policy & Framework</p>	<ul style="list-style-type: none"> • Framework for IT Security and Compliance • Technology Standards • Processes and Procedures
	<p>Governance</p>	<ul style="list-style-type: none"> • External advisory board featuring distinguished professors from two Universities • Active Internal Compliance committees with representatives from across the business • Periodic Executive Committee and Audit and Compliance Committee briefings

Quality and Reliability

Excelling in Quality Management to Create Value

Our solutions range from lifesaving medicines to nutritional supplements, from hospital and home disinfectants to biocides that prevent the growth of harmful mold on painted surfaces. All of this requires us to satisfy and exceed customer expectations, but also meet strict regulatory and quality requirements. That is why our advanced manufacturing, operational excellence, quality-control and quality assurance systems comprise just a few of our core competitive advantages. According to our Quality Policy, our management priorities include the following:

- Delivering high-quality, safe and effective products and services that meet or exceed customer expectations
- Complying with current regulatory requirements and applicable standards
- Continuously improving our quality management system, products and services

To achieve these goals, we operate a quality management system that complies with customer requirements, internal policies, as well as with national and international standards such as ISO and regulations, including current good manufacturing practices (cGMP), Pharmaceutical Inspection Convention (PIC) and Hazard Analysis Critical Control Point (HACCP). The fundamental elements of the quality management system are continuously undergoing improvement.

We operate a global Quality organization within the LBPB and LSI segments, covering all aspects of Quality (e.g., Quality Assurance, Quality Control, etc.), which is centrally managed but allows for local flexibility and execution. Having a central function is fundamental to ensure a consistent approach to Quality across the company to drive customer and business value. We monitor our performance with KPIs and this information is provided on a quarterly basis to the Board of Directors.

We established and monitored KPIs, which are directly linked to customer and business priorities, while effectively and efficiently maintaining compliance across the spectrum of regulatory requirements. In 2019, LBPB has further improved the batch success rate and the number of deviations per batch. In comparison, LSI maintained previous years' improvements in both customer complaint reductions as well as batches manufactured within specifications. We aim to continuously improve on these metrics as well as develop new ones that better reflect our customers, the business and interested stakeholders. We also strive to maintain the high levels of performance, reliability and customer satisfaction.

In addition to continuously improving our KPIs and related customer value, we provide newly hired employees with structured educational sessions focused on the specific tasks they will perform throughout the supply chain. These training sessions result in new hires becoming operational much more quickly, whilst ensuring they are properly qualified to execute against their accountabilities. Flawless execution and strong customer focus remain high priorities for us. We continually strive to understand the expectations of our customers and act accordingly.

Our Approach to Quality

Customer Satisfaction

Be a trusted and reliable partner for our customers and regulators, delivering safe and effective products and services in an excellent and efficient manner

Proactive Quality Culture

Integrating quality through all areas of the organization by implementing a proactive culture focused on "Right first time", continual improvement, and increased productivity

Effective Workforce

Building an efficient and capable workforce by attracting, engaging, and developing high-performing people and providing clear guidance that supports and motivates

Regulatory/ Compliance Excellence

Adhering to regulatory expectations and identifying/evaluating industry trends, as well as continually ensuring audit readiness

Audits and Regulatory Inspections

The vast majority of our businesses are highly regulated. As a result, we are inspected by various Regulatory Authorities, Certification Bodies, and customers on a regular basis. Any findings during these inspections are addressed and used as input for continuous improvement.

In 2019, Lonza Pharma Biotech & Nutrition sites underwent 29 Regulatory GMP inspections. Lonza Specialty Ingredients sites underwent 14 regulatory and cGMP inspections and certification audits. In parallel, the number of customer audits is also increasing in line with the growing number of commercial and developmental products in our expanding portfolio.

To be well prepared for future audits and inspections, we carefully and continuously monitor the quality and regulatory trends in the industry and undertake proactive initiatives where needed. Our internal quality audit program verifies that any such actions are consistently implemented at the relevant sites. Those internal audits are also an opportunity to identify and share best practices throughout the network, including newly acquired sites. Thanks to our proactive quality initiatives, we continue to build our reputation as a supplier of choice.

Customer Satisfaction

We are always eager to ensure that our customers get the best of the products and services we offer and achieve continual improvement and stability of supply. This means having a robust supply chain, operational capacity and efficiency, committed project managers and compliance with strict quality and regulatory standards. Customer engagement is carried out across all regions and businesses and may include current and potential customers. Depending on the business, customer surveys are performed annually, or through customer feedback programs that have included regional phone, in-person and online surveys, using different tools and platforms. Surveys comply with relevant privacy regulations and capture key metrics across customer satisfaction including quality, service, on-time delivery, lead times, communication and project governance, reliability and value delivery in the short and middle term.

As an example, in 2019 the Consumer Health & Nutrition (CHN) business performed an online customer satisfaction survey. The goals of the survey were to strengthen Value Propositions, to establish a baseline beyond capsules and to deliver a systematic response to areas of dissatisfaction.



Environmental

We are committed to sustainable development in all its broad and diverse meanings. In part, this means striving to reduce our use of natural resources such as water and energy, our carbon footprint and the generation of waste.

In our operations, we engage and empower our employees and teams to work towards our Vision Zero – meaning zero workplace injuries, zero manufacturing process incidents, zero emissions beyond regulatory limits and zero transportation incidents. In the workplace, we aim to protect our colleagues as well, by identifying and eliminating potential hazards.

One of our long-term goals is to improve our sustainability performance and reduce our environmental footprint. In 2018, we reviewed our strategy and policy and updated our environmental goals to reflect specifically the longer-term greenhouse gas (GHG) reduction requirement from the Paris Agreement. The Paris Agreement sets out a global climate action plan to limit global warming to well below 2 °C, and we are pursuing efforts to limit it to 1.5 °C.

With our energy and GHG targets, we aim to reduce our CO₂-eq emissions intensity to below 50% in 2030 (baseline year 2010). Regarding waste, we are aiming for a 2% efficiency gain per annum. For water consumption, we aim to introduce local targets and projects in water-intensive or water-restricted sites.

Vision Zero remains unchanged as an aspiration to ensure the safety of our people and our factories and to operate significantly below the permitted emission limits. The programs around Vision Zero will be developed site-by-site and reflect the type and impact of the operations within multi-year roadmaps.

The targets are based on million CHF sales because of our very diverse and ever-changing product portfolio, which ranges from manufacturing of chemical bulk products to pharmaceutical ingredients, from medical capsules to food supplements, from gene therapy to cell media production. Such a level of diversity can only be integrated with a denominator of financial value.

The safety and sustainability targets are therefore intensity values, so that we are able to carry them forward even in the case of major acquisitions or divestitures. Therefore, we have included the Capsugel data without changing the baseline or the target within this business year until year-end. In the first quarter of 2019, we concluded the divestiture of the Water Care business, which further changed the manufacturing and product portfolio.

The safety and sustainability data for Capsugel are fully integrated in our reporting system, starting from January 2018. Therefore 2018 was chosen as the baseline for the targets in the coming years and excludes the Water Care data.

We have reported relevant data within the CDP framework (former Carbon Disclosure Project) since 2007. We also maintain reporting and data on two widely used web-hosted platforms to exchange sustainability profiles and emissions data between downstream customers and upstream suppliers (Ecovadis and Ecodesk).

Long-Term Targets, Total Company Until 2030 – Baseline 2018, Per Million CHF Sales

Zero lost time injuries (aspiration)
24% energy reduction
36% CO ₂ reduction, e.g. through more renewable electricity
24% waste reduction

Milestone 2019 (Per Million CHF Sales), Baseline 2018

Corrective actions and accidents (defined by target)
2% energy reduction
3% CO ₂ reduction, more renewable electricity
2% waste reduction

Our Progress in 2019

Indicator	2018 cont. ops	2019	Change	Status
Energy (GJ/Mio. CHF)	2,231	2,071	-7%	Achieved
CO ₂ -eq (scope 1 & 2 mt/Mio. CHF)*	151	142	-7%	Achieved
Waste** (mt/Mio. CHF)	26.1	26.4	+1%	Not Achieved

* The CO₂-eq rate and the reduction target is relative to the 2018 baseline, recording routine emissions from combustion and general sources (please see Emissions Management chapter)

** The waste intensity baseline value for 2018 has been restated due to data entry inaccuracy.

Our Progress in 2019

All values given for environmental parameters are in relation to sales values in million CHF. The 2018 baseline is based on the continued operations after the divestiture of the Water Care business.

For environmental and process safety incidents in our factories, we have reached a rate of 0.14 and 0.11 respectively, based on 200,000 hours worked, an increase compared to 2018, mostly due to minor wastewater permit exceedances. For accidents in 2019, we have established a new target combining a pre-accident with an outcome metric with the aim to manage the Lost Time Injury Frequency Rate (LTIFR), which is linked to a bonus metric. In 2019, we reached a rate of 0.62, based on 1,000,000 hours worked and reduced by more than 50% compared to 2018.

For the required improvement toward the long-term target and the annual milestones, we are developing three-year rolling safety and sustainability roadmaps for our manufacturing sites. The site management teams are each developing a plan to drive the site towards compliance, efficiency and safety. Local goals are added according to the materiality analysis in the sites, e.g. for water consumption and air impurities.

Energy Management

We are engaged in implementing energy-efficient solutions within our manufacturing facilities. Energy efficiency is clearly connected to greenhouse gas emission reduction and is a lever for manufacturing cost reduction as well. Our main energy sources are natural gas, electricity and the thermal processing of captive waste in Visp, CH (including steam production, co-generation of heat and power).

Energy consumed for manufacturing processes is by far the largest contributor to our climate-relevant emissions. We therefore concentrate efforts regarding greenhouse gas (GHG) emissions on energy-efficiency measures at our manufacturing sites.

We already overachieved on our previous medium-term target plan for 2015 – 2020, which included a 10% reduction of the energy intensity (per revenue) rate, with the baseline in 2015. With this in mind, we updated our energy intensity reduction goals to 2030, with 2018 as the new baseline. In doing this, we aim to reduce GHG emissions resulting from energy consumption along the Paris Agreement timeline of 50% of the 2010 baseline in 2030.



In 2019, the Greenwood (US) site installed a 470 kW solar field, covering 1.8 acres (ca. 7,300 m²) to fully power the electricity needs of its Manufacturing Technology Center (MTC). The solar field will avoid the emission of around 405 tons CO₂ per year and about CHF 67,800 of savings per year.

We are committed to improving the energy efficiency of our operations and aspire to integrate renewable electricity into our supply planning. We are also considering accelerating the adoption of renewable energy sources for electricity, to de-couple electricity consumption and GHG emissions.

Our continuous improvement goals and processes encompass existing facilities, as well as capital projects and new facilities. Our capital expenditure approval process entails a sustainability assessment of larger projects.

Energy efficiency within each site is the responsibility of site and operations management, reporting to the operations head of the segments. At the local level, operations, engineering and environment, health and safety (EHS) departments are responsible for devising local roadmaps to help reach our overall targets regarding energy efficiency, and for setting and achieving local targets accordingly. Usually these departments develop improvement plans in EHS-councils on a site level.

Since 2018, we have been working with a partner to analyze the data for energy consumption, contracting and supply and demand, to centralize the database for all sites into one platform. This has given us a better understanding to further improve energy efficiency and cost management.

We measure our energy use on a regular basis. Beginning in 2018, energy use has been reported quarterly into a centralized global software tool. Ultimately, the data are analyzed by Corporate Environment, Health and Safety (EHS). This vital information forms the basis for updated reduction goals and possible capex projects to achieve major improvements in energy efficiency and other areas. Some sites have adopted an energy management system according to the ISO 50000 framework, which encompasses an energy team, policy, target setting and a rolling action plan.



Changing a light bulb may seem like a simple step but changing to an LED light is a move towards improved energy efficiency. Our Singapore site has taken the first major steps in its plan to replace the existing fluorescent lights or high energy type lamps with LED lights, without affecting lux levels. By end of 2019 the site had already replaced a total of 7,348 lamps with LED tubes and luminaires with a yearly consumption of 1,058 MWh, in areas like the warehouse, utilities, GMP and non-GMP. To further improve energy consumption levels, the majority of units in the high and medium bay warehouses and utilities areas are fitted with motion detector.

The savings amount to 846 MWh per year (ca. 73,000 CHF/year). The payback period from the power savings is 3.3 years, taking into consideration material and man-power costs.

Most production sites require heating and cooling in specific processes, and often this energy may be harnessed for use in other processes. The Copenhagen (DK) site has recently installed equipment that uses waste energy from agarose production which would otherwise be “wasted”.

The site installed a heat exchanger to cool down agarose solution and pre-heat water. The water passing through the heat exchanger is heated from 10 °C to 40 °C and can therefore be used subsequently as hot water, avoiding the use of additional natural gas. This reduction means less 7,200 m³ of natural gas per year (representing 5.6% savings), in addition to the savings in electricity for the agarose cooling compressor of 18,000 kWh/year (3.6% savings). The payback time is less than three years.



Energy Consumption within the Organization

Energy is a necessary input for the various manufacturing processes and vital for utility generation such as steam, heating, cooling, ventilation, compressed air motors and pumps, as well as the air conditioning of buildings, refrigeration and truck transport etc. The major energy source is natural gas, followed by electricity and energy generated on site, mainly through waste incineration (in Visp, CH).

Energy Intensity

In 2019, the intensity values decreased by 7%, which is more than the 2% set in our long-term goals.

This decrease in consumption is driven by two factors: firstly, we are successfully transforming our product mix from chemical synthesis to biotechnological processes using bacterial and mammalian systems. The related manufacturing processes are less energy intensive than chemical manufacturing. Secondly, we are investing heavily in modern energy-efficient production technology and we have recently acquired major companies whose products and manufacturing technologies are energy efficient.

The acquisition and integration of Capsugel accelerated the positive trend in 2018.

Lonza 2019 Total Energy Consumption

Total Energy Consumption (GJ)

Diesel	3,787
Fuel Oil	45,650
Gasoline	3,097
LPG	8,081
Natural Gas	4,692,357
Purchased Electricity Non-renewable	2,912,495
Purchased Electricity Renewable	601,620
Renewable Electricity (On-site)	2,758
Self-generated Energy (Waste Processes)	3,377,814
Steam	611,721
Total	12,259,381

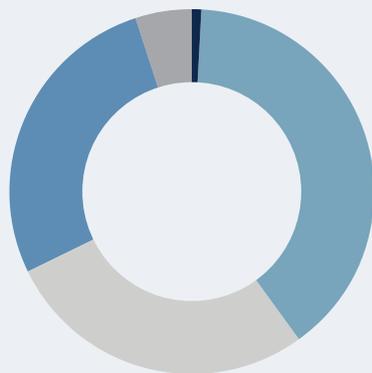
Energy Consumption Intensity 2019

Total Energy Consumption Within Lonza/Revenue

2,071

GJ/Mio. CHF

Lonza 2019 Energy Consumption by Source



■ Liquid Fossil Fuels 1% ■ On-site Generated Energy 27%
 ■ Natural Gas 39% ■ Electricity 28% ■ Steam 5%

Lonza Energy Consumption Intensity

(GJ/Mio. CHF)



■ Energy Consumption
 ■ 2030 Target

Note: Year 2017 values exclude values for the months 7-12/2017 for Capsugel.

Water Management

Water is used for a variety of purposes within Lonza, including heat transfer and cooling, steam generation, washing, cleaning and maintenance, as a product ingredient and for sanitization.

Although water is not a very high priority from the materiality assessment, it is a precious, vital and burdened natural resource, which must be actively managed, specifically in water-scarce areas.

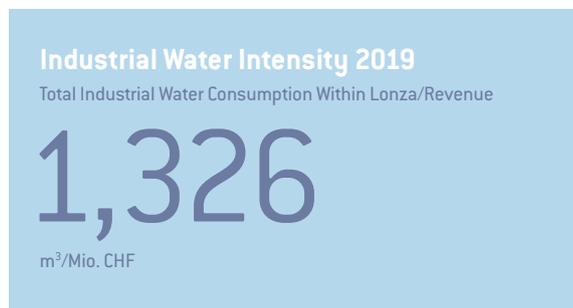
Access to clean, plentiful and portable water is an important factor to ensure the quality of our products. In regions where freshwater is scarce, we may be exposed to water shortages or restrictions, decline in water quality, water price volatility and reputational issues. To mitigate these water-related risks, sites track their water balance and introduce water management programs and reduction targets. Sites in water-stressed regions and geographies, (e.g. India and Mexico), must incorporate measures to optimize water consumption and management into their sustainability roadmaps.

We are committed to reducing the amount of water used by our own operations. Each site is responsible for managing and optimizing its water balance. We measure and monitor both industrial water (which can be altered chemically and physically by the manufacturing processes) and non-contact cooling water (which is not altered as it is only used for its thermal properties).

The previous 2020 target for industrial water intensity of 1,720 m³ / Mio. CHF was achieved already at the end of 2017. From 2019 onwards, we will include water targets regarding quantity and wastewater quality into the site targets. Our total industrial water in 2019 was 7,851 thousand m³.

We measure our water use on a regular basis, and data are reported quarterly to Corporate EHS. Results are followed up and management approaches adapted accordingly.

In 2018, the reporting guideline was updated to further improve the management of the water balance at our sites. As in the past, water use was being tracked but not through its full cycle. Sites are now required to report on the water source, water use and water output indicators, to better understand and manage this critical resource



The local regulator indicated that the Slough (UK) site uses a proportionately large quantity of water. The site saw this as an opportunity to identify the main areas of water usage and discharge and find ways to reduce them.

One project was the installation of additional equipment to reclaim a proportion of the usable Reverse Osmosis (RO) reject water and re-inject it into the front end of the raw water treatment system.

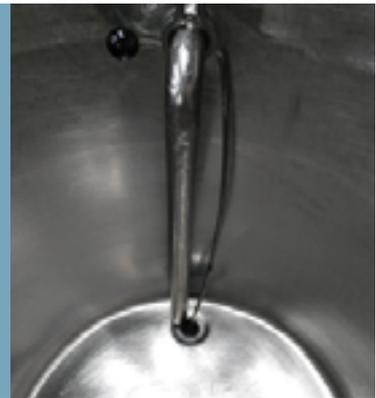
The reclaimed water is used to dilute the borehole mains water at the front end of the raw water treatment system. This means that the water treatment needs less filtering, less energy, less softeners and less reagents. A further advantage is that there is also less engineering hours spent changing inline waters filters for maintenance. From the direct water savings, the payback is around six years.



In our sites, cleaning activities take a significant amount of effort, time, energy and water. The Ploermel (FR) site has recently installed equipment to automatize and optimize their tank cleaning process.

This new high pressure cleaning device for containers and mobile vessels reduces water and energy consumption, reduces labor hours and improves safety. It achieves this by reducing the work through ergonomics, and diminishes exposure to hot water and detergent.

This investment has a payback period of eight months, and a direct saving of 68.4 kCHF per year, including both the water and energy savings.



Although water is not a very high priority from the materiality assessment, it is a precious, vital and burdened natural resource, which must be actively managed, specifically in water-scarce areas.

Water Withdrawal by Source

Water withdrawal concerns the total water used by us globally. More than 90% is used as non-contact cooling water (141,250 thousand m³).

Comparison with previous years is not possible, as water source indicators were not recorded. However, data for water use indicator "Industrial Water" (volume of water consumed in manufacturing operations, excluding non-contact cooling water) is available. From this data, it is clear that the intensity of use related to revenue has been steadily decreasing.

Water Withdrawal by Source 2019

Water Source – Groundwater Wells (thousand m ³)	6,269
Water Source – Public Supply (thousand m ³)	5,513
Water Source – Surface Water Bodies (thousand m ³)	137,359
Total (thousand m³)	149,141

Emissions Management

Based on scientific evidence, greenhouse gas emissions (GHG) contribute to global warming, largely caused by the combustion of fossil fuels to provide energy. This affects us globally and we must address this as a material issue.

In addition to GHG, energy generation and industrial processes result in other emissions to air, such as particulate matter (PM), nitrogen oxides (NOx), sulfur dioxide (SO₂) and volatile organic compounds (VOC). Our goal is to continuously monitor, control and reduce such emissions, to comply with statutory requirements and to reduce them beyond regulatory requirements.

Our GHG emissions result mainly from combustion processes for energy generation (including incineration processes of organic waste) and chemically generated CO₂. With this in mind, we can manage part of the GHG emissions by managing energy consumption and energy sources. To decouple GHG emissions from energy consumption, we strive to increase the amount of renewable electricity (wind, hydro, solar, etc.) in our energy consumption. Together with energy efficiency, this increase in renewables will allow us to achieve a 50% GHG reduction by 2030 (baseline 2010). Chemical processes and reactions can also generate GHG emissions, e.g. fugitive CO₂, which are tracked and reported by the sites.

Rare accidental emissions or leakages are non-routine items and reported when observed. In one factory of the Visp (CH) site a N₂O leakage was detected and confirmed in 2018 and quantified in 2019. In 2019, based on measurements and production volumes, the emissions for 2018 were determined to be around 1,800 tons N₂O, which correlates to 560,000 tons CO₂-eq.

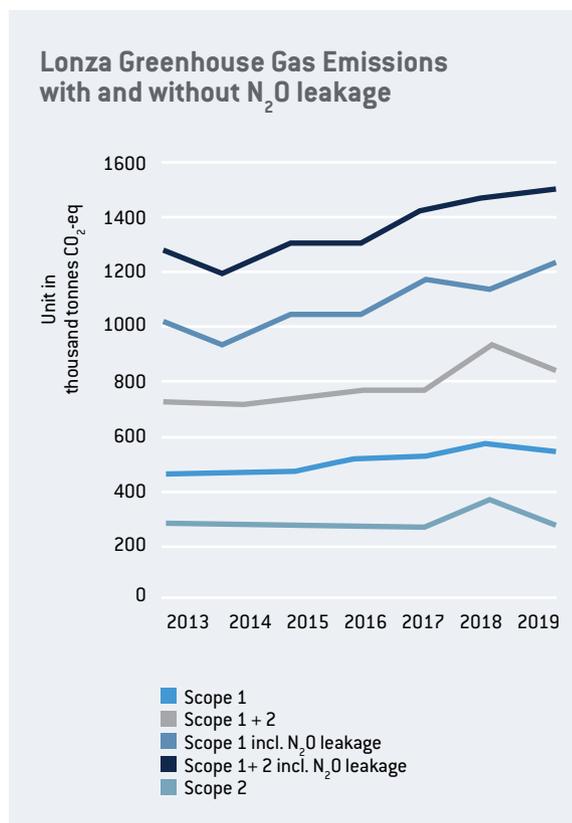
We must assume this leak may have been occurring in previous years without a known start date and therefore we restated all our values for direct GHG emissions (Scope 1) for the reporting time window, based on the production amounts for those years. Indirect GHG emissions (Scope 2) values are not affected.

The N₂O leakage was detected using new high-resolution equipment in the periodic measurements for other air pollutants. The Visp site has taken the necessary steps to determine the quantity of leaked N₂O and disclosed it to the Swiss environmental authorities, including the Federal Office for Environment (BAFU), and the Swiss Pollutant Release and Transfer Register.

The site has developed an action plan together with the relevant authorities. It includes the installation of a new state of the art exhaust gas treatment process to mitigate the leakage, based on a selective catalytical process. The cantonal authorities have approved this project, and it is planned to start up in 2021.

The chart below shows the direct and indirect GHG emissions (i.e., Scope 1 and Scope 2) with and without the N₂O-leakage emissions.

The year 2017 values exclude values for H2 for Capsugel; the increase in the absolute values in 2018 is therefore due to the integration of Capsugel data. For 2019 the GHG emissions from the Water Care business sites are no longer part of the reporting scope due to the divestment.



In 2018, we defined a CO₂ intensity reduction goal based on the aspirations set out in the agreement from the Conference of Parties COP21 in Paris (Paris Agreement), to keep the increase in global average temperature to well below 2 °C above pre-industrial levels.

GHG emissions are mainly a result of combustion processes to generate heat and power for our manufacturing processes and facilities. Therefore, we manage GHG emissions in parallel with energy consumption.

2019 — 2030 Target for CO₂
 Minus 3% per Annum/Total Revenue

50%

reduction of our CO₂ Footprint Intensity by 2030 (Baseline 2010)

ENVIRONMENTAL

We measure our GHG emissions use on a regular basis. Energy use and CO₂ emissions are reported quarterly to Corporate EHS. Other air emissions continue to be reported annually. Results are followed up and relevant management approaches are adapted accordingly.

Given the nature of the N₂O leakage emission and the measures undertaken to reduce it in the next two years, we will continue to track our 2019–2030 targets using the same baseline (2018) and targets as defined in 2018.

In parallel, we will track and provide updates on the intensity of the emissions of the N₂O leakage. We will also continue to report our absolute carbon emissions (Scope 1 and total emissions) with and without the N₂O leakage.



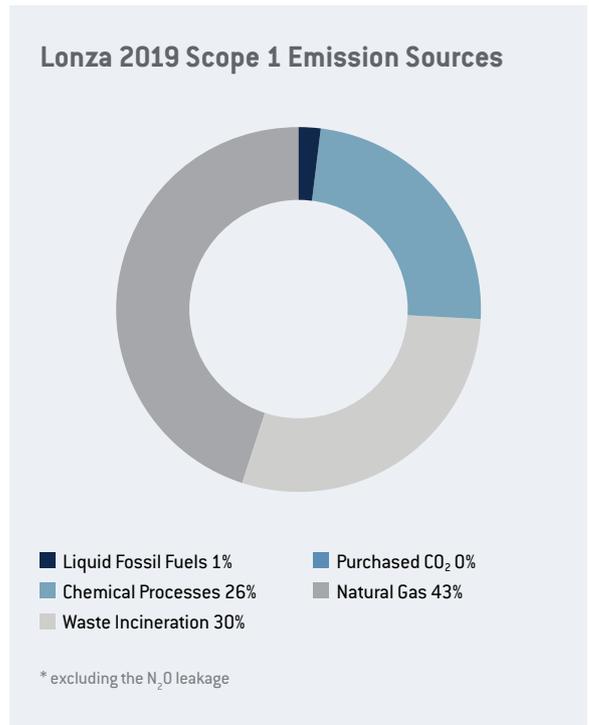
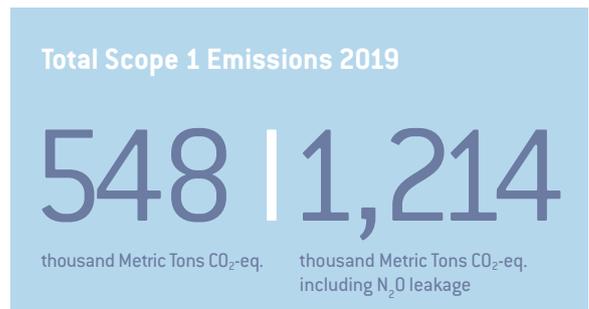
Coupling waste treatment with energy generation is an important step towards reducing resource consumption and carbon emissions. The Colmar (FR) site decided to invest in this and adapted their processes to use the steam generated from the city's incinerator. The payback period will take three to five years, depending on the amount of "green" steam produced, and gas prices.

As part of our commitment to decouple our CO₂ emissions from our energy consumption, some of our sites have 100% renewable electricity supply, including Porriño (ES), Basel Headquarters (CH), Geleen (NL) and Auckland (NZ).

Direct (Scope 1) GHG Emissions

Scope 1 includes direct GHG emissions from sources owned or controlled by us. Emission factors are used for calculating emissions from fuel combustion (CO₂, CH₄ and N₂O), including from owned vehicles. CO₂ and N₂O emissions from other on-site processes, such as chemical reactions or waste incineration are directly measured, calculated or estimated by the site. Waste and waste gas incineration serve two purposes: final waste treatment and energy production.

As mentioned above, a N₂O leakage was detected in a factory in Visp (CH). Below we present the total Scope 1 emissions for Lonza including and excluding the N₂O leakage.



Energy Indirect (Scope 2) GHG Emissions

Scope 2 includes GHG emissions from the generation of purchased electricity and steam, which are calculated based on regional specific standard emission factors using IPCC AR4 and US EPA Climate Leaders. In most sites, the energy consumption is metered directly; in multi-tenant facilities, the consumption is derived by our approximated consumption.

Lonza 2019 Scope 2 Emissions

Total Scope 2 Emissions (GJ) (thousand metric tons CO ₂ -eq.)	289
Steam	33
Electricity	256

Other Indirect (Scope 3) GHG emissions

Scope 3 includes indirect GHG emissions that occur in the value chain, including upstream and downstream emissions. In 2018, we began to evaluate the carbon emissions from travel. Extrapolations of available data shows a footprint of 15 T mt of CO₂ for business travel for the entire company in 2019. This figure is derived from samples of approximately 70% of total travel contracts extrapolated to 100%. The calculations used by the travel providers are based on the GHG Protocol. Rail travel emissions were estimated by multiplying all rail travels with an average distance of 100 km. The decrease compared to the values estimated from 2018 is probably a factor of the following: improved overall data, elimination of Water Care business from the calculation and reduction in overall travel, due to policy restrictions.

GHG Emissions Intensity

Given the nature of the N₂O leakage emissions and that measures are being taken to reduce it in the next two years with the installation of an exhaust gas treatment process, we will keep tracking our 2019–2030 targets using the same baseline (2018) and targets as defined in 2018.

The carbon emission intensity values from routine processes decreased by 7% in 2019, exceeding the 2% reduction set in our long-term goal (when not accounting the N₂O leakage).

Lonza Greenhouse Gas Emissions Intensity with and without N₂O leakage



The integration of Capsugel and of its GHG emissions in 2018 accelerated the decrease of our carbon intensity.

Nitrogen Oxides (NOx), Sulfur Oxides (SOx), and Other Significant Air Emissions

Even though in the materiality assessment only GHG emissions were identified as the priority, other emissions such as VOC and NOx are also important to our operations and for compliance with local regulations. These emissions are also included in the previous 2015 – 2020 intensity reduction goals as “Air Impurities” (VOC – Volatile Organic Compounds, NOx – Nitrogen Oxides, SO₂ – Sulfur Dioxide, PM – Particulate Matter).

Continuous investment, technical improvements at emission points and emission control equipment contribute to the reductions we have observed over a period of years. From 2019 onwards, we have included air impurities into the site roadmaps, where this parameter is material.

Carbon Emissions Intensity 2019

Total GHG Emissions Within Lonza/Revenue

142 | 254

tons CO₂-eq./Mio. CHF

tons CO₂-eq./Mio. CHF
including N₂O leakage

Lonza 2018 Total Air Impurities

Air Impurities in Metric Tons

VOC	209
NOx	441
SO ₂	4
Particulate Matter	40
Total	693

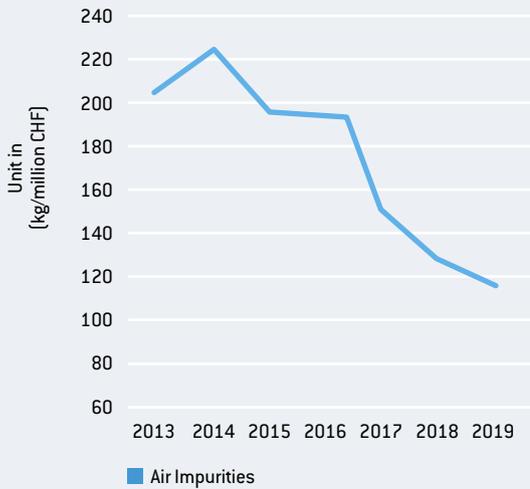
Air Impurities Intensity 2019

Total Air Impurities Emissions of Lonza/Revenue

117

kg/Mio. CHF

Lonza Air Impurities Intensity



Note: Year 2017 values exclude values for the months 7-12/2017 for Capsugel.

Waste Management

As a chemical and biotechnology company, we strive to remain transparent with stakeholders and local communities about how we manage waste and wastewater. Communities have a vested interest in how we manage waste and water discharge from production, as they may be directly impacted through potential water contamination and improper disposal of waste.

Each manufacturing site maintains a waste disposal operation tailored to its waste streams for an efficient, environmentally sound treatment and disposal of waste outputs. All sites are committed to our waste reduction principles:



In our production network, organic solvents play a vital role fueling a broad spectrum of physical and chemical manufacturing processes. By recycling solvents, we reduce the environmental footprint significantly and reduce waste and related costs. Whenever we can, we cycle the recovered solvents back into production processes. Additional uses, such as extractions for wastewater purification, steam generation or external sale all help to generate value and reduce waste.

At the Visp (CH) site, we currently recycle and reuse 20,000 tonnes of organic solvents annually, representing 40% of the total amount used. Besides avoiding the consumption of virgin materials, recycling also avoids additional transportation costs and impacts. All other solvents are used as fuel to generate steam and electricity, generating around 1,150 TJ per year. This amount of energy represents a saving of over 30 million m³ of natural gas.



At certain locations, e.g. Visp (CH), we operate our own waste and wastewater treatment. We carefully select our partners for waste transportation and treatment based on performance and capabilities in Environment, Health and Safety (EHS).

We work to ensure that the treatment and disposal of all waste materials is conducted in full conformance to local regulations and international standards. The waste management system and performance at our manufacturing sites is subject to regular inspections and audits.

We seek to reduce waste resulting from production, offices and laboratories, and to comply with water discharge requirements.

We are committed to increasing input materials efficiency in our production processes, including reworking out-of-specification production, whenever possible. We strive to reduce effluents by controlling and reducing water inputs. Locally, effluents are managed according to their quantities and parameters as permitted by the local authorities.

Effluents and waste efficiency of our sites are the responsibility of the site management and operations management reporting to the operations head of the segment. The operations or site manager is responsible for promoting and actively implementing our waste reduction principles, for setting and achieving local targets accordingly and for local compliance requirements for effluents.

We measure our waste and effluent generation on a regular basis. Since 2018, waste and wastewater are reported quarterly to Corporate EHS via a software tool. Results are followed up and management approaches are adapted accordingly. In 2019 we started managing waste and water usage through site sustainability roadmaps. This will help site management to devise an action plan to actively shape the consumption of water and materials.

Remediation

Our largest site in Visp (CH) continues to address legacy mercury contamination along a former wastewater discharge canal, on surrounding soils and other areas where contaminated sediments were deposited. This issue dates back to when we used large amounts of mercury as a catalyst in chemical processes. The site discharged industrial mercury-contaminated wastewater into the canal between the 1930s and 1970s before the construction of the wastewater treatment plant.

Since 2013, we have worked closely with local communities to finance and implement the required technical investigations in residential areas and agricultural zones between Brig-Glis and

Niedergesteln (CH). By the end of 2019, 93 parcels of land in Visp and Raron (CH) were remediated and the work will continue in 2020 with further investigations being conducted on the agricultural and canal areas.

Together with the Swiss Canton of Valais, the municipalities and other parties involved, we are working closely to efficiently resolve the mercury-related industrial heritage within the perimeters of concern. We maintain a [public website](#) (in German) on the remediation activities and progress.

The Gamsenried disposal site in Gamsen (CH) is owned and managed by us and consists of an old and decommissioned area and a new and fully permitted disposal site. This is used for waste incineration slag from the Visp site and the regional waste incineration plant. The older decommissioned section was primarily used for lime hydrate and gypsum sludge and is being analyzed in detail for traces of mercury and other contaminants. In this area, the management approach includes ground water monitoring and pump and treatment of the contaminated groundwater downstream of the landfill. Additionally, air measurements were performed in collaboration with the University of Basel, which showed that mercury levels in the air are within designated acceptable limits.

Water Discharge by Quality and Destination

In many of our sites, industrial water is collected in tanks or reservoirs and treated in our own or external wastewater treatment facilities. If collected and treated on site, water is tested according to local permits before discharge into the sewage system or to a surface water body.

Our local businesses hold permits for water treatment and for the relevant wastewater discharge parameters, like quantity and chemical limit values. However, due to the diverse nature of requirements, we do not report on discharge water quality. The following water emission parameters are tracked in sites where such emissions are material: heavy metals, nitrogen, organics (COD and TOC) and phosphorus. Other parameters are tracked in line with local regulation and the type of the operations.

Lonza 2019 Water Discharge Quantities

Total Water Discharged (thousand m ³)	148,951
Water Discharge to Sewer (thousand m ³)	7,503
Water to Water Bodies (thousand m ³)	141,448



The Visp (CH) site is a leading high-tech manufacturing, service and R&T hub. The site has ambitious goals, including reduced emissions of organic compounds into surface water. The main actions and achievements in the last years were:

- Reduction of active ingredients (AI) emissions into surface water by 97% between 2010 and 2019
- Reduction of dissolved organic carbon (DOC) emissions into surface water by one third between 2015 and 2019

These improvements were achieved as a result of an active wastewater management, including separate treatment of wastewaters containing API and reduction of poorly degradable organic carbon (TOC_{ref}) sent to the wastewater treatment plant.

Taking an example, the results obtained at the plant producing 2-Methyl-3-butin-2-ol, an intermediate for vitamins, fragrances and agriculture, were:

- 60% reduction of wastewater amount
- 50% reduction of TOC discharge, and 90% of TOC_{ref} discharge

This optimization was achieved by strong collaboration between the different teams (production, R&T, analytical services, engineering and EHS).

Waste by Type and Disposal Method

In 2018, the corporate reporting guideline was updated to specify definitions of waste and boundaries. Construction, demolition, remediation and excavation waste are excluded from the sustainability reporting framework; only production-related waste is tracked at a corporate level. Solvents which are used as fuels within Lonza sites are reported as waste for fuel, although they allow us to reduce natural gas consumption considerably. We are reflecting to remove these fuels from the waste balance in the future and account for them as fuels.

In 2018 we defined a long-term global waste intensity reduction target of 24% by 2030, which requires an on-going waste reduction program of approximately 2% per year. In 2019, we have not achieved the 2% reduction target. The increase in waste intensity was mostly due to the rise in several waste streams in our Visp (CH) site. This increase was due to several factors, including the following:

- changes in the product portfolio, including more waste intensive products and production processes
- The wastewater treatment plant was at full capacity and therefore effluent had to be incinerated. A project is underway to increase capacity
- The need to discard batches due to quality issues
- Additional cleaning regimes for process optimization.

The site is actively working on a number of reduction measures. A large part of the waste volumes are solvents which are used to produce steam and electricity and save considerable amounts of natural gas. In Visp (CH), the energy generated from incinerating waste solvents and waste gases was 1,908 TJ, and from recovering waste heat in 2019 was 1,141 TJ: these replace the consumption of 87 million m³ of natural gas. In total we generated around 156,000 tonnes of waste, which is monitored by type and destination. The quantities of waste which are landfilled are mainly incinerator ashes, which are deposited in our own licensed landfill sites close to our Visp (CH) site. We also strive to increase the recycling of use solvents (see Box on page 37).

Lonza 2018 Waste Disposal Quantities by Destination

Waste Types and Destinations²

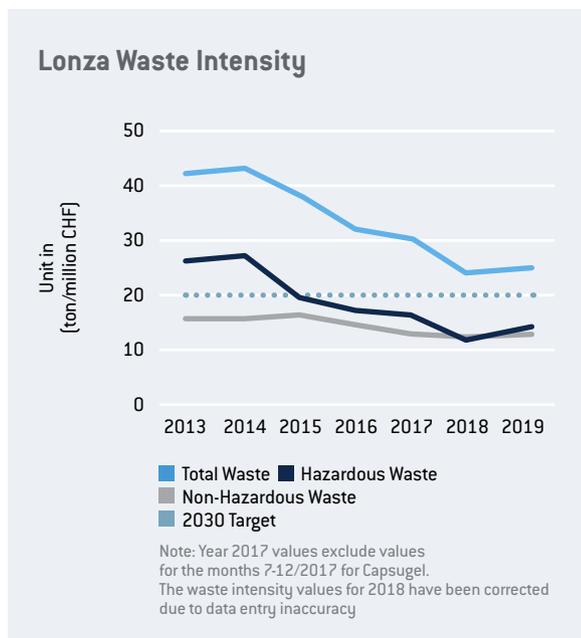
Waste – Hazardous – Incinerated [t]	73,465
Waste – Hazardous – Landfilled [t]	2,824
Waste – Hazardous – Recycled [t]	5,390
Waste – Hazardous – Treated [t]	220
Waste – Non Hazardous – Incinerated [t]	53,257
Waste – Non Hazardous – Landfilled [t]	14,870
Waste – Non Hazardous – Recycled [t]	6,279
Total	156,306

² Waste is defined as hazardous/non-hazardous by local legal definition

The waste intensity varies over the past decade, mainly due to the fact that construction waste was not separated from production waste before 2015. Construction and excavation activities contributed to the peaks observed in most recent years. After having refined the waste reporting guidelines, we will report numbers for production-related waste streams.

Waste Intensity 2019
 Total Waste Intensity Within Lonza/Revenue

26.4
 ton/Mio. CHF



Regular internal audits of different functions (internal audit, EHS-audit, loss-prevention visits, quality-audit, authority inspections and other) deliver both oversight and governance. EHS- audits are performed in a three-year cycle, and reports with findings are distributed to the senior management.

In a management review with their teams, site managers verify compliance and results from regulatory inspections. The findings of this review are reported to our Ethics and Compliance Group. Fines, which are an indication for non-compliance, are reported into the environmental data system and are reviewed to identify the root causes.

We maintain the Lonza Ethics Hotline, a compliance channel (phone, e-mail, mail) that allows every employee to raise concerns about non-compliances with internal and external rules. The notification can be made anonymously, where allowed under applicable law, as the channel is maintained by a third party. All notifications are taken seriously and assessed with due care and attention.

Most of our subsidiaries work with external advisors to stay informed about regulatory changes. The compliance assurance process is relying on the employees and the management teams of the sites. Audits allow us to regularly review, assess and maintain compliance.

We did not incur significant fines in 2018 for non-compliance with environmental laws and regulations. We have undertaken a survey of the environmental and socioeconomic compliance of all Lonza sites and resulted in no observations.

Environmental Compliance

We are committed to regulatory compliance and ethical behavior in all areas of our operations. Environmental compliance is a material topic for all our sites and businesses, across all regions, and includes our supply chain and products.

Accountability for environmental compliance rests with the sites and the businesses. Each one employs a management system approach, which includes the regular information on legal changes and a compliance assurance mechanism with internal and external controls. Various sites have implemented a certified ISO 14001 system, which includes oversight over the regulatory requirements. Additionally, in 2019 we have reviewed the EHS management system in accordance with ISO 14001 and ISO 45001.

Innovating for Sustainability

We are committed to creating value for society by delivering innovative, science-based solutions for our customers. For an overview of our most important innovation steps, please refer to the innovation highlights for [LSI](#) and [LPBN](#) in the Our Businesses section of the Annual Report.

Pharma Biotech & Nutrition is largely a business-to-business contract manufacturing segment. Therefore, staying up-to-date with production technology and to streamline manufacturing processes is the route to efficiency.

Remaining within regulatory requirements is an ambitious task with bio-control products, our largest market in the LSI segment.

In Chemical Research and Development (R&D) we focus on chemistry and technology innovation and integrate sustainable thinking into our design processes.

Our goal for resource-efficient production includes developing chemical processes that positively impact yield, reduce solvent usage and minimize energy consumption. The use of state-of-the-art technologies, such as continuous flow manufacturing, is a key enabling strategy to reach our objective.

Additionally, to keep up with the latest innovation and sustainability developments, we actively collaborate with expert technology and academic research in these fields.”

Stef Vanquickenborne
Head of Chemical R&D LPBN

We provide our customers with unique microbial solutions aimed at improving the hygiene and preservation of a broad range of end products, from skin creams to paints.

Research and Development teams work with colleagues from Regulatory, paying close attention at every step to finding solutions that ensure minimum eco-toxicity.

We also work to use natural or naturally derived ingredients, which are particularly important in our Personal Care products. We are able to deliver formulated solutions with our expertise in microbiology, analytical chemistry, formulation and surfactant science.”

Jordan Petkov
Head of Global Technology Microbial Control Systems

In Research and Development (R&D), Sustainability means developing innovative solutions that ensure effectiveness for patients and enable efficient manufacturing processes across the Lonza network.

We aim to optimize resource utilization, with a special focus on reduction of water consumption.

We are introducing new tools and processes to stimulate collaboration and innovation; we have launched a portfolio management solution for R&D projects and a platform to capture external innovation, which will serve as a knowledge base for innovative and sustainable ideas.

We look at how we can add value for our customers by making pharmaceutical ingredients and antibodies with state-of-the-art technology, while continuously striving for cost-effectiveness, higher productivity and higher quality.”

Sarah Holland
VP of Licensing & Head of Bio R&D LPBN

Innovation is also important in our processes. For example, our LSI segment has implemented an innovative [Pareto Optimization Tool](#). A team, led by the Fraunhofer Institute for Industrial Mathematics ITWM, has developed a model-based toolbox in order to reduce energy requirements in the production of chemicals. The approach combines multi-criterial optimization algorithms with physical models, helping to find a way to efficiently optimize manufacturing processes. We were one of the two companies actively involved in the long-term development of the algorithms. The project received a Fraunhofer Research Award in 2019. This development provides us with our own optimization tool for production plants. As a first result, energy savings in the double-digit percentage range have already been achieved in a distillation column at the Visp (CH) site.

To appeal to the modern, “green” consumer, there is constant pressure to ensure dietary supplements are aligned with individual needs and preferences. However, demand for aesthetically pleasing products is also growing rapidly.



With color commonly used to achieve differentiation. Our range of Vcaps® Plus food colored capsules has been developed using food colorants derived from foodstuffs. This enables dietary supplement producers to achieve clean-label, naturally sourced color in their products, without the use of food additives that need to be labeled as colorants or E-numbers (the latter is a particular issue in Europe). The first of these solutions to be marketed worldwide is the Vcaps® Plus Purple Carrot capsule, which follows the successful introduction of the Vcaps® Plus Blue Spirulina capsule in Europe and now in Canada. Two new colors – the Vcaps® Plus Spicy Yellow and Vcaps® Plus Red Radish capsules – will be launched in 2020.



In the Personal Care business, consumers are better informed, engaged and connected than ever before. Increasingly, they also care about the impact of their choices on the planet. We aim to increase the offer in cosmetic ingredients with a more sustainable and socially responsible profile. In 2019, we launched XPressEV® and H20BioEV® bioactives.

XPressEV® multi-functional bioactive is designed to help reduce the visible effects of aging, for consumers of all genders and ages. This bioactive has 100% natural origins according to the new standard ISO 16128. The mulberry leaf extract is obtained using a supercritical CO₂ extraction, which is the most appropriate to extract the lipophilic phytochemicals, while avoiding the use of organic solvents and organic emissions to water, land and air.

H20BioEV® bioactive is designed to moisturize the skin by replenishing essential humectants and providing an optimal environment for epidermal proteins to form and maintain a strong barrier. It combines the cyanobacteria *Aphanothece sacrum*, aqua-cultured in Japanese rivers, and Galactoarabinan, extracted from FSC certified larch trees close to the Lonza Cohasset production facility. The ingredient extraction is water-based, meaning it is also solvent free.



Globally there is a growing number of pharmaceutical and biotechnology companies and a rise in the number of new drug and medical device approvals. These trajectories are driving an increase in the need for endotoxin testing. The test for potentially life-threatening toxins must be performed on all parenteral drugs, as well as medical devices, before approval. Until recently, the industry had to rely on the standard limulus amoebocyte lysate test (LAL), derived from horseshoe crab blood. Increasing focus on protecting the 450-million-year-old species of crab and its role in delicate ecosystems is driving the search for animal-free detection tests.

Lonza was the first company to commercially develop a non-animal derived product, Pyrogene®, as a synthetic alternative to LAL. 2019 marked a breakthrough year on the path to adopting this new testing method by the industry as the European Pharmacopoeia officially recognized it as an alternative. This paves the way for more companies to join pioneers like Eli Lilly, whose migraine drug Emgality became the first drug to win U.S. regulatory approval using a synthetic test, and make a commitment to reducing the use of animal-derived products.

Social

Our people are the cornerstone of our business, and we offer many opportunities for our employees to improve their skills, build on their experience and grow their careers. We provide them with safe workplaces, care for their well-being and encourage their involvement in creating a positive working environment.

We aspire to be a good corporate citizen by providing projects for education, environment and health. We engage in a wide range of initiatives to deliver benefits to our many stakeholders, including the communities in which our employees and their families reside.

By cultivating relationships and contributing our knowledge, expertise, and support, we create sustainable value for our communities around the world.

Investing in Communities

Our sponsoring approach

In many of the communities where we operate, we act as a neighbor, a vital source of jobs, a charitable sponsor of local civic, cultural, health and educational projects and a significant contributor to local economies. While our financial donations are important, our employees also play a critical role by volunteering in relevant programs and projects.

We aspire to be a reliable, long-term, active sponsorship partner and to engage at the earliest stage of community projects. Accordingly, we focus our resources on a small number of carefully selected projects where our engagement can make a significant difference. Our sponsoring activities focus on the following four priority giving areas: Health & Science, Education, Humanitarian aid and Environment.

Health & Science

Continuing the successful “Lonza Makes You Fit” program (Switzerland)



In cooperation with the organizers of the [Gornergrat Zermatt Marathon](#), “Lonza Makes You Fit” was a project initiated in Visp and Basel in 2016, and remains a focal point of our community investment. The goal is to make our employees fit for the Gornergrat Zermatt Half-Marathon. We have developed a comprehensive training program, that prepares participants to complete the most beautiful mountain race in the world. In 2019, more than 200 employees from Basel and Visp have registered for the running project and 155 colleagues participated in the Gornergrat Zermatt (Half-) Marathon or Ultra.

In 2019, we were the main sponsor of the third edition of a race for the cancer charity Bärgrüf (meaning: things are looking up). As part of our “Lonza Makes You Fit” program, nearly 80 of our colleagues participated in the event and raised more than CHF 70,000.

In recent years, the project in Visp was extended from running to cycling and the “Energy for Every Day” concept was set up to support a healthy work-life balance. For the last three years, around 500 employees have taken part in one or more programs. This is the equivalent of around 20% of our workforce in Visp.

The annual charity golf event (USA)



The Lonza Harvest Open is an annual charity golf tournament organized by volunteers from our site in Portsmouth, NH (USA). It raises awareness and funding for specialized projects for local non-profit organizations in the Seacoast region of Maine, Massachusetts and New Hampshire. During the last 17 years, we have raised more than \$1.7 million for 36 New Hampshire charities.

Completing a 100-Day Health Challenge (UK)



During the summer, more than 420 colleagues at Lonza Slough and Cambridge took part in a virtual “Walk around the World” alongside 35,000 other teams as part of a health challenge. Our 60 teams of seven took part in exercise activities, as well as working to improve their approach to nutrition, mental well-being and sleep – all during a virtual tour, covering destinations such as Peru or Norway. Participants earned points and “trophies” along the way. Lonza Slough and Cambridge employees walked more than 532 million steps, which equates to a distance of more than 340,000 km. Among our participants, the number of employees who now meet the recommended 10,000 steps per day is 76% [compared to 25% before participating in the challenge].

Supporting the Lonza Arena (Switzerland)



We are the headline supporter of the new ice and sports center in Visp, which has been named Lonza Arena. The new sports center will be the home of the [EHC Visp](#) (a Swiss professional ice-hockey team) and has a capacity of 5,000 spectators.

Education

Committing to support school for underprivileged children (India)



Since 2015, we have maintained a relationship with the Marathi Medium School Vidya Vikas Mandal for underprivileged children in Mumbai (IN). Established in 1957, the school is currently home to around 600 students and provides primary and secondary school education facilities. We have supported the school by constructing and renovating school buildings and by setting up e-learning facilities, alongside computer and science laboratories. Our support has made a positive change to students’ lives and has enabled the school’s management to work towards their mission of improving education for their students.

In 2019, we opened new offices in Mumbai and Gurugram, India. As we have expanded our presence, we have also expanded our support for local communities. Our local leadership team visited Sidrawali College, a local school in Haryana and donated reverse osmosis (RO) water purifiers and water coolers. In doing this, we hope to ensure that the students are able to maintain their health and wellness through improved access to clean and cool water.

Bringing classical music closer to kids and teens (Switzerland)

For the last five years, we have partnered with the Basel Chamber Orchestra to support the “Classroom Piece” project. Delivered with the assistance of four of the orchestra’s musicians, the project aims to give children and young people the necessary support to develop their musical abilities, independent of social and cultural backgrounds. We are proud to support this novel project with the goal of bringing classical music closer to the local community.

Promoting youth in science (Switzerland)

In 2019, we continued our five-year partnership with Swiss Youth in Science (Schweizer Jugend forscht). Established in 1967, the foundation supports motivated children and young people to find inspiration in science.

The foundation’s courses encourage children and young people to become more immersed in subjects such as mathematics, computer science, natural sciences and technology. They can also explore options for their future studies or professional careers. Through our engagement, we help contribute to the promotion of science and to developing the next generation of scientists.

Supporting a social think tank (Switzerland)

For many years, we have been a partner of Avenir Suisse, an independent think tank that focuses on the future of social development, in the context of politics and economics. Founded in 1999, the organization works to encourage political action to help solve problems with initiatives, plans and proposals. To support this objective, it delivers social analytics projects, organizes conferences and participates in public debates.

Humanitarian Aid

Supporting the fight against cancer (Switzerland)



In 2019, we actively supported various projects and organizations in their fight against cancer in Switzerland, including the Swiss Cancer Foundation and the Stiftung Krebskranke Kinder Beider Basel. Lonza AG presented a donation to the Swiss Cancer Foundation while the Lonza Drug Product Services (DPS) team presented a donation to Krebskranke Kinder Beider Basel,

which had been raised collectively over the course of the year. We are proud to be partnering with organizations that can raise awareness and make a difference to the lives of cancer patients and their families.

Improving sanitation (Uganda)

An estimated 2.3 billion people lack access to improved sanitation and hygiene. Uganda, as one of the poorest countries in the world, is in urgent need of sanitary improvements. Many people in rural areas and even in the outskirts of major cities rely on pit latrines or outhouses for sanitation. If untreated, pit latrines can become a breeding ground for mosquitoes, germs and viruses, which contaminate the environment and spread disease.

To address this challenge, we have collaborated with the non-governmental organization Clean Habitat Uganda to provide sanitizing tablets for use in treating pit latrines. Clean Habitat Uganda distributes our sanitizing tablets to communities serving 5,000 homes. Since the kick-off in 2015, the project has evolved and expanded its reach into more local communities to support improved sanitation..

Environment

Supporting local wildlife conservation (USA)

Lonza Greenwood, SC (USA) has been certified by the [South Carolina Wildlife Federation \(SCWF\)](#) for the W.A.I.T. (Wildlife and Industry Together) program. The SCWF advocates for the preservation and recreation of wildlife habitats across South Carolina. The W.A.I.T. program is designed to encourage corporate landowners to integrate wildlife habitat needs into corporate land management decisions. The outcome is enhanced environmental awareness, a positive environmental impact and an improved working environment for colleagues.

As part of the program, Lonza Greenwood has dedicated a plot of land to the creation of a “Carolina Fence Garden”. This garden serves as a habitat for the Carolina Wren and the South Carolina official state butterfly, the Eastern Tiger Swallowtail. It also integrates several cultural symbols of South Carolina such as the State flower, the Yellow Jessamine, materials including the South Carolina Blue Granite, and a split rail fence, which is representative of what South Carolina farmers typically used in the late 19th century.



In addition, Lonza Greenwood established a partnership with the Horticulture Team at Piedmont Technical College to promote community involvement and to incorporate the garden into horticulture curriculum for plant identification.

Coastal area cleaning projects (USA)

In summer 2019, our Portsmouth site launched a four-week “Lonza Olympics Challenge” encouraging employees to participate in a series of Beach Cleanups. The initiative was a true success as colleagues could use their volunteering hours to collect a total of nearly 500lbs of trash from local beaches. This has provided an opportunity for colleagues to contribute solutions to the local community and the global environment..

Occupational Health and Safety

Occupational Health and Safety are of vital importance to us. This is why we work to mitigate negative occupational health and safety impacts on everyone: our workers, our customers and other stakeholders who may be present on our sites.

More than five years ago, we took a step up to operate even more safely and sustainably by announcing the “Vision Zero” initiative. This program has led to a remarkable reduction in safety incidents and increased efficiency. Its ultimate goal is to accomplish zero workplace injuries or illnesses, zero manufacturing process incidents, zero environmental incidents and zero transportation incidents involving our products or services.

Under this commitment, we want to ensure that every employee returns home at the end of the working day safely and in good health. We seek to provide a workplace environment that does not affect the health or otherwise compromise the well-being of our employees.

Instead of establishing a global goal for incidents, our 2019 safety targets were set on a site-by-site basis and linked to the bonus, based on identification and closure of safety related corrective actions at each of our operating sites. This moved us from a lagging metric based on injuries that can have high variability from year to year, to a leading metric that drives employee behavior and involvement. This target resulted in more than 33,500 safety improvements in 2019, largely identified and corrected by our shopfloor workforce. In 2019 we experienced a Lost Time Incident Frequency Rate of 0.62 [1 Mio. workhours], and a Recordable Incident Rate of 0.49 [200,000 workhours].

Lonza Long-Term Targets 2019–2030

- Zero lost time injuries (aspiration)
- Annual milestone: Number of corrective actions and accidents (defined by target)

Labor practices and safe working conditions are the responsibility of site management, which reports to the Global Head of Operations for each segment.

At a local level, the site, the operations and the EHS managers are accountable for safety and for setting and achieving local targets accordingly. Ultimately, every employee must contribute by identifying residual risks, observing colleagues’ safe behaviors and working safely at all times. Safety is a condition of employment.



The campaign “Our Safety Is Important to Me” in Visp (CH) draws attention to Visp’s safety culture at work and outside, by involving employees and their families and friends. This year it focused on three topics: “Stumbling and Falling”, “Awareness” and “Hygiene”. The example below shows Moritz Schmid, a Lonza employee and his friend Simon, a mountain guide. The message is to ensure awareness at work and while hiking in the mountains. A brief moment of inattention can have serious consequences. No distractions. Less accidents.

SOCIAL

Whereas the EHS policy defines high-level principles, our corporate EHS management system and our detailed guidelines support their implementation. The process safety team – part of the corporate EHS group – is working closely with the sites on the implementation of rules and standards for safe processes.

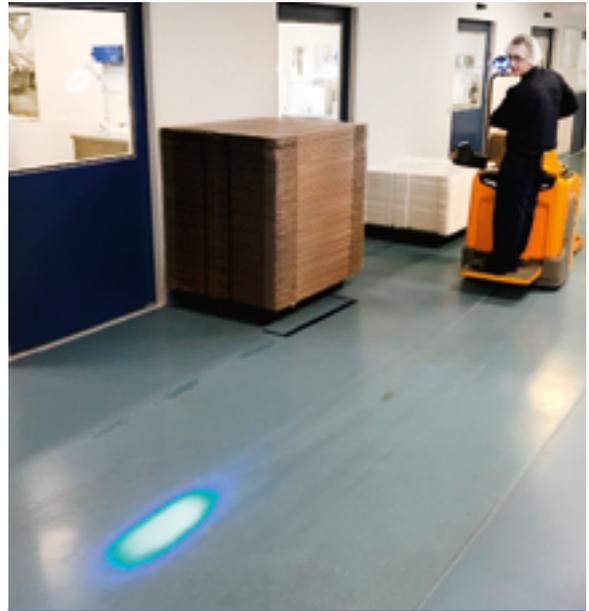
Some sites are certified according to ISO 45000 or Responsible Care. In 2019 we modified our management system to be fully aligned to ISO 45000 requirements.

EHS policies include:

- Guidelines including Health Surveillance, Critical Work, EHS Management System and policies on incident tracking and reporting
- Operations policies establishing minimum standards to ensure the safety of personnel in a variety of activities
- Site Security and Business Continuity Planning
- Construction Site Policy, which includes contractor requirements

We regularly audit sites and locations – on average every three years – to ensure compliance with rules and regulations, technical integrity and effective management systems.

We actively monitor our performance regarding occupational health and safety. A monthly analysis report is distributed to global and local line management and to all EHS managers. These reports and the subsequent activities are carefully tracked and measured, and global and local management adapt approaches accordingly. Our number of environmental incidents has increased to 23 compared to 11 in 2018, largely through minor wastewater permit exceedances. Our rate of process safety incidents (number of events, fines and penalties) was similar to 2018. Most of these incidents are related to contained leakages.



To prevent accidents with pedestrians and other vehicles, the Bornem (BE) site installed Blue Spot Technology on forklift trucks and electric pallet trucks. The LED light attached to the driver's protective roof frame projects a blue warning spot onto the ground. This simple visual solution draws attention to moving forklift trucks and significantly increases safety, both in aisles and at crossings where visibility is poor.



Stairs bring movement into your daily routine, but they also represent a hazard to the inattentive. Our Slough (UK) site has introduced a mandatory Stair Code which gives five simple steps to stay safe on stairs.

Occupational Health and Safety Management System

We maintain an EHS Management System which has been adapted to the actual ISO 14001 and 45001 standards, and detailed guidelines for people safety. This program applies to all locations and all employees.

Hazard Identification, Risk Assessment and Incident Investigation

Work-related hazards are corrected through hazard identification and (near-miss) reporting, job safety analysis, site inspections and Process Hazard Reviews. Site personnel are trained in these processes, and local and global EHS leaders review corrective actions that were generated and completed. Near-miss hazard reporting is encouraged by a target system per site and include a reward program for employees who submit corrective actions for potential hazards or find other ways of making the workplace safer and more productive.

All incidents are investigated. A formal root cause analysis process, aligned to the ThinkReliability methodology, is used for recordable injuries as well as significant process safety incidents and environmental incidents. All employees are allowed to stop and to refuse actions that they consider hazardous for themselves, their colleagues and /or the community and environment.

Occupational Health Services

All operating sites have a program aligned with the HazCom program (Hazard Communication Standard from OSHA, the US Occupational Safety & Health Administration) for the identification of chemical hazards. All sites also have a designated clinic or physician for evaluation of occupational injuries or illnesses.

Worker Participation, Consultation and Communication on Occupational Health and Safety

Worker participation is required and outlined in our process safety program. Major sites have a safety committee for input on all safety-related matters. Additionally, all sites are required to conduct sequential safety meetings.

Worker Training on Occupational Health and Safety

All sites conduct required safety training on hazardous materials (HazCom), critical safe work procedures, evacuation, process safety analysis, etc.

Additionally, in 2019 our global initiative “Be a Safety Leader” was launched, to promote the best possible safety culture through the inclusion of all colleagues. Be a Safety Leader encourages all employees to develop a mindset and attitude that prioritizes safety, first and always. The culture change initiative has been launched at ten sites and will be subsequently rolled out globally.

Sites are required to train all colleagues and develop learning plans for future employees and to establish site implementation teams. They are also responsible for developing creative approaches (hazard assessment, defining critical behaviors, foster coaching at all levels) and developing a communication plan for such initiatives.



Emergency response skids are an important safety measure in chemical manufacturing. But they can be heavy or out of reach. To address this, colleagues in Trentham (AU) designed a transportable module which can be readily moved via forklift to the emergency. This was initiated by the manufacturing operators at the site. It also reduces the likelihood of musculoskeletal injury during an emergency situation.



In Walkersville (US) the site’s EHS manager sends a personal safety message every day to all site employees. The site also organized an open house event that allowed families of employees to take an interactive tour around the site to get a better understanding of how the site operates and to see what their loved ones do at work. Employees also took #WhyIWorkSafe photos with their families. The photos exemplify why everyone should work safe, for their families.

SOCIAL

Promotion of Worker Health

All our sites are motivated and passionate about health, safety and injury prevention. They understand that investing in employee health and well-being pays dividends and ensures colleagues stay fully engaged.

As an example, we offer free flu shots to all employees at our three Swiss sites in Basel and Visp, an initiative that attracts large interest every year.

Prevention and Mitigation of Occupational Health and Safety Impacts

We continuously monitor our operations regarding health risks for our employees. This includes (but is not limited to):

- Job and technical hazard assessments, e.g. ergonomic hazards
- Technical improvements
- Training and education
- Substance exposure monitoring for chemical exposures, according to the limit values set by the corporate toxicology group

Our products are primarily pharma-related or regulated microbial control products. In addition to required safety information, these products and their raw materials undergo extensive testing, registration requirements, instructions for use, etc.

Work-Related Injuries

In the calendar year 2019, we recorded a total of 20 Lost Time Injuries which is a marked improvement over last year's numbers. The number of Recordable Incidents were positively trending to 77 in the reporting year.

We did not record fatalities resulting from a work-related injury, nor injuries resulting from commuting incidents from transport organized by the company. Most injuries recorded and analyzed in 2019 were the result of slips, trips, falls, sprains and strains, which is commonly the case in our industry.

Lost Time Injury Frequency Rates (LTIFR) are calculated based on one million hours worked. Data only represent employed workforce and agency workforce in regular manufacturing processes. All workers are included in incident tracking and reporting; however, rate information is only available for direct employees, as contractor hours are not tracked.

All injuries are evaluated and corrective actions are generated for specific incidents, as well as action plans for significant causal situations. Strains resulting from manual handling are a recurrent concern. Several sites are undergoing ergonomic assessments and most sites have manual handling training using the Safety in Motion system

2019 Safety Performance

77

RECORDABLE WORK-RELATED INJURIES

20

LOST TIME WORK-RELATED INJURIES

0.62

LOST TIME INJURY FREQUENCY
(PER 1 MILLION HOURS)

2.4

RATE OF RECORDABLE WORK-RELATED INJURIES
(PER 1 MILLION HOURS)

32Mio.

HOURS WORKED IN 2018

0

FATALITIES



Non-Discrimination and the Protection of Human Rights

Our Code of Conduct prohibits any form of discrimination. It states that we do not tolerate any discrimination, harassment or bullying on the basis of ethnicity, national origin, color, religion, sexual orientation, creed, age, sex, disability or any similar characteristic. We do not engage in or support, directly or indirectly, child labor, or bonded or forced labor of any kind. This applies to all our subsidiaries and to our vendors, either directly or elsewhere in the supply chain.

We regard respect for human rights as a foundation of the business in all our markets. As a signatory of the United Nations Global Compact (UNGC) since March 2009, we support the protection of internationally agreed human rights and ensure that we are not complicit in human rights abuses. Being active in many parts of the world, we are present in some regions ranking high on human rights risk indices. We see it as our responsibility to assess our own operations with regard to potential human rights violations. Therefore, we included this element in the survey initiated in 2019 across all sites.

Our Code of Conduct requires all employees to comply with applicable laws and regulations at any location where we have operations, including child labor and forced labor. We provide annual training and self-certification to all our employees regarding compliance with our Code of Conduct. We also provide additional training to our purchasing employees on the Supplier's Code of Conduct.

We also expect our suppliers to respect human rights, as reflected in the Supplier Code of Conduct, which sets out certain ethical and quality standards, including standards related to labor, health, safety, the environment and against corruption and bribery. Our Supplier Code of Conduct focuses in particular on human rights and labor laws, such as prohibiting the use of forced or involuntary labor, inhumane treatment or physical punishment of workers, the use of child labor below the age of 16 or the applicable minimum legal age, whichever is higher. It also sets out requirements regarding work hours, minimum wages, and overtime hours to be paid to employees, as well as any fringe benefits, in compliance with applicable local law. The Supplier Code of Conduct applies to both our suppliers and to any subcontractors or other third parties that a supplier may engage in the performance of its contractual obligations. Currently, suppliers are instructed to implement internal measuring procedures, tools and indicators required to guarantee adherence to the Lonza Supplier Code of Conduct principles. Suppliers are encouraged to report any violations by sending an e-mail to compliancegroup@lonza.com or by using the [Lonza Ethics Hotline](#).

According to the Lonza Sourcing and Purchasing Policy, we reserve the right to ask for a written confirmation of a supplier's compliance with the Supplier Code of Conduct and to audit its suppliers accordingly. In the event that we are made aware of any actions or conditions not in compliance with our Supplier Code of Conduct, we reserve the right to request corrective actions and/or to terminate any agreement with a non-compliant supplier, unless our supplier agreement provides otherwise.



Customer Health and Safety

We manufacture a broad range of specialty chemicals, hygiene actives, household disinfectants, cosmetic ingredients and preservatives, nutritional supplements and pharmaceutical and biotech products. All these products require a high and often regulated manufacturing practice to assure the standard of quality and efficacy. Our products in the personal, household care and consumer health and pharmaceutical areas, are subject to a high and increasing level of regulation. They need to be evaluated, manufactured, labeled and used appropriately, to exclude health and safety risks for customers and end-consumers.

Moreover, public perceptions, regulation and global chemical management initiatives such as GHS (Globally Harmonized System for classification, labelling and packaging of chemicals) are intended to reduce chemicals with potential negatively impact to human health and the environment. These trends can formally or informally restrict or limit the use of chemical substances and make Customer Health and Safety a critical element of excellence in our business sectors.

We are predominantly involved in business-to-business transactions. This constitutes part of our role as a supplier of goods that are used to manufacture final products placed on the pharma, chemicals and consumer markets. It is our duty to ensure that our products are fit for purpose and can be used by customers safely for their intended purpose. Customers are generally formulators who also have procedures and specialists

to assess hazards and risks as well as promote the safety of their products. However, we believe that our responsibilities include providing the foundation and data for the safe use of our customers' products.

We believe that our performance in the area of Customer Health and Safety sets the standard for our immediate peer group. Even so, our performance in assessing and improving the health and safety impacts of our products, remains an area of growth and investment as we integrate acquisition products and businesses into our product stewardship and management structures. In particular, global SAP EHS capabilities, global procedures and control, and comprehensive databases continue to be developed to improve our performance as they are brought online.

Our guiding Code of Conduct requires compliance with all applicable regulations governing our businesses. However, we are committed to achieving a high-performance product safety and regulatory culture that goes beyond fulfilling technical requirements. We are committed to continuous improvement in reducing the existing hazards and risks associated with the use of our products. Our management approach to customer health and safety is intended to minimize the potential of negative impacts associated with the use of our products.

We have experts in regulatory compliance and registration, dangerous goods and product classifications, toxicology and risk assessment and product stewardship, covering regions in which we do business and our business segments. These functions are integrated into marketing and business initiatives and represent a significant component of our value proposition. Products are evaluated for health and safety through systematic processes and procedures embedded in our organizational and business structures

Chemicals Registration, Labeling, Packaging

Our product formulation expertise, product-regulatory assurance and global regulatory support provide distinct competitive advantages in a world of increasing requirement for chemicals registration, labeling and packaging. We have a team of more than 60 regulatory experts in Europe, the Americas and Asia Pacific which serves and supports our businesses globally, ensuring compliance with existing regulatory requirements and staying abreast of future requirements. Their expertise is also of great value to customers who incorporate our regulated ingredients in their applications.

One challenging program is the European Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) initiative. In 2018, the Lonza Specialty Ingredients segment successfully registered all substances imported, manufactured and marketed in the European Union under REACH by the May deadline. REACH is an ongoing effort, and we will strive to continue to comply with the requirements.

Regarding the health and safety of our employees, we made significant improvements relating to the risk-based exposure control of chemicals in the work environment with the formation of a corporate function for toxicological assessments of substances in 2018. Previously, this assessment was carried out locally in the sites or by consultants. During 2019, over 1000 substances were assessed or reassessed for their safe handling limits, which puts us at the top of the industry regarding the efficiency and the results of the process.

About Animal Welfare

To ensure the safe handling and use of products, regulatory authorities in many countries require animal testing. Whenever possible we use validated alternatives to animal tests, and we cooperate with independent contract laboratories, which are carefully selected to ensure they meet the highest ethical and quality standards. When qualifying contract labs, we evaluate their accreditation concerning animal welfare protection as well as their abilities to adhere to 3R principles (Replacement, Reduction and Refinement) and adopt alternative methods. In the LSI segment for example, we seek opportunities to contribute to and participate in scientific collaboration validating new alternative methods.

We have also developed alternatives to animal testing. Examples are the Bioscience Solutions' primary cell and media product lines, which represent one of the major alternatives to animal models in R&D labs.

Assessment of the Health and Safety Impacts of Product and Service Categories

We believe that the development and production of effective products that can be used safely for their intended purpose is fundamental to sound and ethical business practices. Regulatory, Product Safety and Toxicology functions are involved in product development and developing business initiatives via Integrated Product Management (IPM) and Regulatory Review Committee (RRC) processes. Ingredients and products are evaluated for hazards, and any potential hazards and risks associated with their intended use are clearly communicated via product labels, Safety Data Sheets (SDS) and technical communications to our customers.

Socioeconomic Compliance

Our Code of Conduct requires compliance with all applicable laws and regulations. All employees are educated to understand and comply with all laws, regulations and best practices that apply to their activities, whether they relate to accounting, tax, anti-corruption, competition, the provision of products or services, labor issues or others. It provides specific sections on compliance with the principles of fair competition and laws restricting the operation of cartels and other monopolistic practices, anti-bribery laws and regulations, as well as insider trading regulations.

We provide annual training to all our employees regarding compliance with our Code of Conduct, and have the Lonza Ethics Hotline in place.

We recently initiated a full-company survey regarding compliance with principles of human rights, environmental compliance, anti-corruption, non-discrimination, etc. A survey of our sites has been completed in 2019 and resulted in no observations or risks.

Talent Management

Our teams work together to draw upon our pharma and biotech expertise and specialty chemical knowledge to advance human health. As we continually reinvent our business, a high-performance culture connects employees with the commitment to provide exceptional results for customers. To support this, we offer support and development through our talent management processes.

In 2019, we built on several local recognition and service awards to pilot a broader recognition and reward program at several sites globally. Based on its success and positive feedback from participants, a global launch is planned for 2020. This initiative's goal is to support and enable the expansion of the company culture, encouraging collaboration, team work and recognition across the Lonza network.

In 2019, we launched a global Talent Referral Program intended to encourage and incentivize our employees to refer friends and acquaintances for vacant positions across our business. The "Lonza Core Competencies" were developed in consultation with the Executive Committee in 2015 and introduced to the business in 2016. They are integrated into our daily work through talent acquisition, assessment and performance management processes. They are designed to be future-oriented and relevant to all employees at all grades. The Core Competencies are split into both Business and People facets:

- Business Competencies

We aim for our employees to focus and deliver, by knowing the business and thinking ahead about our interests, while taking into account internal and external customer requirements.

- People Competencies

Our people should facilitate changes and be flexible to learn, communicate effectively and work successfully in a team, which includes being reliable and taking the lead when appropriate.

Performance Management

All employees participate in the Lonza Performance Management process, Maximizing and Aligning Performance (MAP). In this initiative, we recognize and encourage superior individual effort, behaviors and achievement through performance check-in conversations, personal recognition and through our incentive plans. In addition, employees get an opportunity to communicate their interests and career aspirations. Leaders provide coaching, feedback and the opportunity to grow skills through development and planning activities.

Our Talent Philosophy is Driven by Five Principles



Performance

We believe in and expect strong, sustained employee performance; those in critical roles are held to a higher performance standard.

Behaviours

How we behave while achieving business results directly influences compensation and career progression. ('What' = results; 'How' = behaviour).

Differentiation

While we develop all employees, our investment in talent development will prioritize high potential individuals. Those at the highest level of performance will receive significantly higher rewards than those with average performance.

Accountability

People Managers are evaluated on delivering results as well as how well they build the quality and depth of their team.

Transparency

We share information with employees about the talent processes, and provide frequent and honest feedback so there are no surprises during the Performance Review discussions.



In the scope of our Vision Zero objectives, in 2019 we launched the global initiative Be a Safety Leader. This initiative's purpose is to promote the best possible safety culture through the inclusion of all colleagues. We involve all employees in the identification, reporting and correction of unsafe conditions, the number of which we use as a leading metric. In this context we have recorded and closed around 33,500 corrective actions with a safety focus..

We also recently launched a new Employee Value Proposition (EVP), with the strapline, "A Meaningful Difference". Recognizing that retaining and attracting the best talent is essential to achieve our company's growth goals, we embarked on a program to overhaul our employer brand. To do so, we undertook extensive research including the voice of our employees and perceptions from the external talent community. The outcome enables us to describe the overall experience at Lonza:

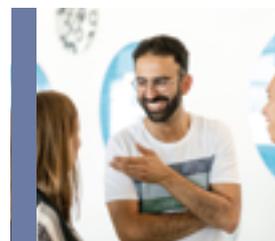
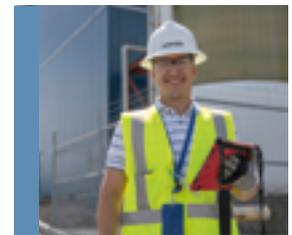
We are here to make a Meaningful Difference. It is the foundation of the way we do business. Looking after our people, our customers and our planet is core to our purpose. A career at Lonza is more than a job. What we do today is helping to create a healthier, happier world tomorrow. That's the meaningful difference we make.



Employee Engagement

We work to ensure that Lonza is a place where people are engaged and enabled to perform. Employee engagement is a key enabler because we want our employees to:

- Evolve with us
- Create tomorrow's solutions
- Empower the customers' success
- Impact what matters
- Engage in safety and sustainability



Our EVP is a reflection of our employees' experience of the organization and its people. An authentic position allows our employees to better connect with the global organization and act as ambassadors to contribute to the future growth of the organization.

To better connect with our employees, our segments, our businesses and our sites, we conduct employee surveys on a regular basis. For example, the LPBN Pulse Survey contains questions on different topics like Engagement, Future Vision and Leadership, Growth and Development and Change Management. These are all designed to capture employees' feedback on our culture, our way of performing and opportunities to improve. Survey results are handled with absolute confidentiality. The last survey was conducted at the end of 2018, with 1,374 responses (72% response rate) and results were benchmarked against previous surveys.

After the survey was completed, focus groups were held at the sites with local initiatives to action and improve.

In 2019, our Finance Organization conducted a survey to better understand how people feel about their experience working for Lonza and their function. The target group was the CFO functions, including Accounting, Procurement and Investor Relations. The survey had a 64% response rate. The overall results show strong positive sentiments, but also some areas of concern, such as the fast speed and intensity of change or the number of concurrent projects, which causes competing priorities. The survey highlighted the benefit of a strong teamwork approach and of high commitment to take responsibility and to deliver strong results. Human Resources and the Finance leadership team are currently working on concrete actions.

GRI Content Index

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General Disclosures			
GRI 102: General Disclosures 2016	102-1	Name of the organization	Lonza Group Ltd
	102-2	Activities, brands, products, and services	10
	102-3	Location of headquarters	Lonza Group Ltd Muenchensteinerstrasse 38 4002 Basel, Switzerland Tel +41 61 316 81 11 Fax +41 61 316 91 11 sustainability@lonza.com www.lonza.com
	102-4	Location of operations	Please consult Lonza's website: https://www.lonza.com/about-lonza/company-profile/locations-worldwide.aspx
	102-5	Ownership and legal form	Lonza Group Ltd. is a public company, listed at the Swiss Stock Exchange (SIX) and with a secondary listing at the Singapore Exchange Securities Trading Limited (SGX-ST).
	102-6	Markets served	10
	102-7	Scale of the organization	Page in Annual Report 2019 <ul style="list-style-type: none"> • Our Businesses 30 • Financial Statements 78 • Risk Management 158 • Our Strategic Focus 20
	102-8	Information on employees and other workers	11
	102-9	Supply Chain	13
	102-10	Significant changes to the organization and its supply chain	Page 8/9 in Annual Report 2019
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	102-14	Statement from senior decision-maker	4
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	102-16	Values, principles, standards, and norms of behavior	13
	102-17	Mechanisms for advice and concerns about ethics	13
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102-40	List of stakeholder groups	17	

GRI Standard	Disclosure	Page	Comments
General Disclosures Cont.			
	102-41 Collective bargaining agreements		<p>In Lonza, on global level there are no employee organizations and representatives. Therefore, we are not collecting specific information about collective bargaining agreements in affiliates. Generally, the Lonza Group companies are established in countries where representation of employees is the rule, via work councils, unions and collective bargaining agreements. Local Management is responsible for maintaining good labor relations according to legal requirements and agreements with unions, work councils and other employee representing bodies.</p> <p>We respect these relationships and work with these parties in a mutually respectful manner. In addition to the country-specific employee representation, we have also established a European Work Council that holds regular meetings to maintain a positive culture of information and communication. In the European Works Council, all European countries with more than 100 employees are represented by employee nominated delegates: Belgium, France, Germany, Czech Republic, the Netherlands, Spain, the United Kingdom and Switzerland. The European Work Council is assisted and supported by a union secretary.</p>
	102-42 Identifying and selecting stakeholders	16	
	102-43 Approach to stakeholder engagement	16	
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	102-45 Entities included in the consolidated financial statements		A listing of principal subsidiaries and joint ventures of Lonza Group Ltd is available in Note 33 of the financial statements in the Annual Report 2019.
	102-46 Defining report content and topic Boundaries	19	
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	406-1	Incidents of discrimination and corrective actions taken		Omissions: No disclosures on discrimination incidents.
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