

Sustainability Report

2021





Contents

About this Report **03**

Message from our Chairman and CEO **04**

About Orbia: a global, purpose-led company **09**

- Our Purpose and Values
- Our Business Groups
- Our ImpactMark

2021 ESG Highlights **14**

**Sustainability at Orbia:
solving for the most critical challenges** **18**

- Science-Based Strategy & Materiality
- Sustainability Governance Structure
- Commitments and Progress

Sustainable Solutions: advancing a net zero economy **23**

- Contributing to the UN SDGs
- Impactful Ventures

Safety and People First **29**

- Process Safety
- Product Stewardship Approach
- Caring for our People
- Thriving Communities

Environment: protecting our planet **46**

- Committed to Climate Action
- Circularity
- Water
- Biodiversity

Foundations of Responsible Business **60**

- Corporate Governance
- Risk Management
- Ethics & Compliance
- Cybersecurity
- Supply Chain

Business Group Spotlights **68**

- Polymer Solutions (Vestolit & Alphagary)
- Building & Infrastructure (Wavin)
- Precision Agriculture (Netafim)
- Data Communications (Dura-Line)
- Fluorinated Solutions (Koura)

Data and Performance **80**

- ESG Performance Data Summary
- SASB Index
- GRI Index & Data Tables
- UNGC COP
- CEO Water Mandate



About this Report

We extend a special thank you to all our colleagues and partners who have supported our sustainability activities and programs in the past year, including Orbia's Corporate Sustainability Team.

This is Orbia's 13th annual Sustainability Report, covering the role we play in society and our impacts on people and planet. Data in this report relates to the 2021 calendar year, and encompasses all global businesses under Orbia's operational control. All monetary figures in this report are expressed in U.S. dollars (USD), unless otherwise specified.

Environmental and safety data in this report covers sites that were active and operational during 2021, from their date of acquisition or up to their date of divestment for all sites where we have operational control and excluding joint ventures where we have 50% or less ownership. Environmental data includes manufacturing sites (excludes offices, warehouses, distribution centers or other sites). Safety data includes all facilities, comprising manufacturing sites, offices, warehouses, distributions centers, and R&D labs.

The selection of content for this report was informed by a set of material topics developed through a process described in our [Materiality Assessment Results](#). This report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards, the Sustainability Accounting Standards Board (SASB) 2018 Chemicals Standard; and includes Orbia's annual Communication on Progress for the UN Global Compact and Orbia's CEO Water Mandate disclosure. A selection of sustainability data was assured by an independent third party. Their assurance statement can be found in our [2021 ESG Databook](#). Throughout this report, data marked with a check mark (✓) is third-party assured.

We welcome your feedback, queries and suggestions. Please contact: sustainability@orbia.com

The 2021 Sustainability Report is part of Orbia's annual reporting suite, available at orbia.com



[Annual Report 2021](#)



[ESG Databook 2021](#)



[Sustainable Solutions Report](#)



[Climate Report \(TCFD\) 2021](#)



Message from our Chairman and CEO



Dear stakeholders,

Two years ago, we couldn't have predicted how dramatically our world would change, nor how quickly we would evolve to stay ahead of it. As we enter the third year of grappling with the COVID-19 pandemic, Orbia and our people have shown—more than ever—resolve and resilience in facing compounding challenges of health constraints, economic uncertainty, climate events and supply chain disruptions.

2021 for us demonstrated what it truly is to transform. We made the most of our integrated value chain and applied ingenuity to delivering the cleaner, greener, essential solutions that our customers, shareholders and stakeholders need to live well today and thrive tomorrow. We witnessed time and time again how our shared purpose to advance life around the world propelled our rise to meet new challenges. And we realized that pursuing this purpose was inextricable from solving for the greatest challenge, opportunity and responsibility for our present and future generations: the decarbonization of our planet and enabling climate resilience.

Triple bottom-line sustainability is—as it has been for over 65 years—our commitment and the reason for our existence as Orbia. It has shaped who we are, how we show up and clearly links to our ImpactMark: a transparent and first-of-its-

kind performance indicator that shows our year-over-year impact on key metrics relevant to people, planet and profit. To maintain growth and drive the transition to the net-zero world we want to see, this commitment requires action. While our performance in 2021 has been proof that we are on the right path, our growth agenda has also evolved with the COVID-19 pandemic.

Our mandate to the executive team in 2021 continued to be putting health and safety first and care for the needs of our community and stakeholders in our hardest-hit regions worldwide. With rigorous safety protocols in place in all of our sites, teleworking in play for nearly half of our workforce and health risk management policies prepared, safety was, is, and will continue to be our number one priority. In 2021, we were pleased to report a 19% reduction in total recordable incidents versus 2020, reversing the trend that we saw in the previous year and bringing us back on our long-term course to zero accidents. We will continue to set aggressive goals for our teams and work relentlessly to achieve them, as getting to a zero-accident future takes a steadfast commitment to cultural transformation. With the support of our leaders and their contributions to risk management, continuity planning and new ways of working, we know we can stay safety-first ahead of any wave.

Juan Pablo del Valle Perochena
Chairman of the Board of Directors



With over 22,000 employees working for impact, we continued to build on the positive momentum that started in the second half of 2020 and stayed focused on operating our assets while keeping people safe. We invested in capacity and increased connectivity with our customers to meet demand. Revenue and EBITDA reached historic highs at \$8.8 billion and \$2.05 billion respectively, with EBITDA growth at 55% year-over-year, supported by organic gains and acquisitions and despite pressures from raw material, transportation, labor and supply chain disruptions as well as material cost increases. Operating cash flow was \$982 million in 2021, as compared to \$871 million in 2020. This increase was driven by the significant improvement in EBITDA, which was partially offset by higher working capital needs tied to higher raw material and other operating costs, which in turn led to higher inventory values and increases in selling prices. With the expectation that raw material costs will moderate over the course of 2022 and our intent to reduce working capital, we expect to generate cash during the coming year and contribute to continued gains in operating cash flow.

In 2021, we too saw profound benefits from our diversified and integrated portfolio only to be realized by working as one Orbia.

Owning raw material assets and material chemistry acumen provides us with significant advantages in security of supply as well as product and cost efficiencies. But with these benefits come a bigger responsibility: to invest in and collaborate across all our businesses and improve the way by which fluorine, polymers and other materials are made sustainable and into sustainable solutions.

From field to table, ground to home, mine to market and lab to life, we sought to support food and water security, building and infrastructure resilience, data connectivity and health and well-being with the lightest-footprint-possible solutions.

This was our relentless focus in 2021, and will continue to be the key to our evolution as a future-fit company.

With our eyes set on value creation, our business groups capitalized on synergies—especially those between Polymer Solutions, Precision Agriculture and Building & Infrastructure—and expanded into high-value categories. In our Polymer Solutions business, we ensured security of supply to our customers around the world with materials for water, sanitation and other essential solutions for good health. We also started the development of bio-based PVC options with an eye on the future. In our Building & Infrastructure business, we expanded our offerings in segments including stormwater management and indoor climate-control for resilience and energy efficiency in all the places we call home. In our Precision Agriculture business, we cleaned up the footprints of our precision irrigation offerings and moved into turnkey greenhouse solutions to help our global stakeholders continually grow more with less. In our Data Communications business, we invested in more large-scale, dig-once fiber and conduit projects to bring connectivity to more populations and communities around the world. And last but certainly not least, in our Fluorinated Solutions business, we expanded our portfolio of next-generation refrigerants, medical propellants and energy storage technologies set to drive a decarbonized future.



Going forward, we are looking to invest in geographic expansion, extend our service offerings and technologies and pursue acquisitions across our businesses to sustain us as we deliver ever better, smarter, cleaner solutions. Our success in this—and in any business strategy—starts and ends with governance.

The appointment of Sameer Bharadwaj, as our Chief Executive Officer early in 2021 became a watershed moment. Sameer’s leadership was ushered in with decisive moves to continue strengthening our world-class corporate practices. Our Board of Directors continues to provide invaluable guidance to safeguard our purpose and values, oversee our management performance, promote responsible corporate citizenship and serve our shareholders. At the close of 2021, our esteemed Board members Eugenio Clariond, Fernando Ruiz, Ignacio del Valle and Adolfo del Valle retired. We are grateful for the tenure, leadership, guidance and dedicated service in steering our

transformation journey. In addition, Anil Menon elected to resign for personal and professional reasons. Anil is a global leader who was key to our Board’s diversification in perspective and internationalization. We are grateful for his invaluable contributions. To add experience and fresh perspective, we appointed two new independent Board members in 2021: Mark Rajkowski, the former Chief Financial Officer of Xylem and an executive advisor guiding Fortune 500 companies through transformation and Mihir Desai, a professor at Harvard Business School and Harvard Law School with deep experience in corporate governance, tax policy and corporate finance.

In 2021, Orbia’s Corporate Practices and Sustainability Committee also took steps to better align Board and management practices with shareholder interests by establishing a new long-term equity incentive plan that links a significant portion of management compensation to Orbia share value as well as approved share ownership guidelines for senior management to be implemented in 2022. Crucially, our Corporate Practices Committee also revised the charter and governance framework to make our leaders’ ESG responsibilities more explicit. By tying executive compensation to performance and modifying our Long-Term Incentive Plan for employees to reward value creation against ESG metrics, we further embedded sustainability into our daily work. Furthermore, we revamped

our risk management systems to stay ahead of emerging risks and streamline protocols across business groups, recognizing that climate change will be a critical risk to solve for considering our future and the future of humankind.

As we seek to make an impact on material topics core to our sustainability agenda, we maintained focus on fortifying our greatest capital: our people.

To support employee fulfillment, development and well-being and foster a diverse community, we dedicated attention to attracting, developing and retaining the best talent through implementing a people-centered management strategy, expanded our learning and training resources through Orbia’s flagship eXP career development program and engaged thousands in our global community in ongoing innovation projects related to “moving the mark” on the ESG metrics that constitute our ImpactMark. To ensure that the Company has the best future-fit team and players in place, we also initiated a succession planning process for our senior leaders to identify, recruit and retain key executives who will move us forward.





2021 was also a pivotal year for making progress against our ambitious environmental goals to see net-zero carbon emissions (Scope 1 & 2) by 2050. We aligned our business objectives to this end by implementing new Scope 3 emissions reduction target and issued our inaugural Sustainability-Linked Bond. We renewed our commitment to upholding the recommendations outlined by the Task Force on Climate-Related Disclosures (TCFD) by mapping our physical and transitional risks to strategic planning efforts. And we saw the results of having worked closely and diligently across our business groups for wide adoption of renewables and green production processes: as of 2021, our revenue from products that contribute to advancing the UN Sustainable Development Goals (SDGs), increased by 24% compared to 2020, and 23% of our sites are powered by renewables, with that number growing by the day.

We have now introduced sustainability considerations into our capital expenditure approval process. And crucial to continuity, have maintained our ethical foundation of conducting business in full compliance with applicable laws and our Code of Ethics. With employees speaking up in greater numbers, we've had the opportunity to improve our workplace practices and awareness thereof. We refined and unveiled new resources reinforcing our commitment in 2021, with the launch of Data Privacy, Acceptable Use

and Gift policies as well as a Third-Party Due Diligence tool across Orbia to automate the process for completing legally required Anti-Corruption checks. These resources supplement our annual Ethics Survey, Ethics Month programming and periodic Ethics & Compliance webcasts that help us live by the shared responsibility to do our jobs ethically, every day.

When we look to find the bridges that get us from here to there, present to future, what is to what could be, we can look to our vitality as an innovation-driven partner and internal engine. We continued to invest in our LaunchPad intrapreneurship program in 2021 to see more than 7,500 team members submitting ideas in sustainable innovation, with 40 ideas approved for implementation in 2022 in areas ranging from operational efficiencies and product innovations to digital transformation and an anticipated financial impact of \$10 million by 2023. With decarbonization in our view, we continued investing in the acquisitions and partnerships with potential to move industries and our entire economy in the right direction. Extending from the first investments of our Orbia Ventures fund completed in 2020, we led funding rounds in and ventures with clean tech startups steering advanced lithium-ion battery solutions, green hydrogen production and carbon capture technologies. And we are just beginning.

The pandemic has unquestionably sped the change and global reshaping of life and business. We are on the cusp of an awakening. By continuing to embed sustainability into our corporate governance structures, advance our circular and green solutions, seed new partnerships to develop clean technologies and broaden our engagements with local communities, we can accelerate to net zero and an uncompromised, sustained value for all.



We've looked around the bend and see opportunities to grow substantially over the next year and in the decade to come. But most important, we've seen a world that runs on renewables, where the places we love are preserved for our children and theirs, one in which sustainability is the bottom-line for all businesses and the standard for life well-lived. Whether partnering to innovate lithium-ion battery chemistries or pursuing AgTech solutions for enhancing precision agriculture; advancing polymer recycling technologies or transforming plastic waste into new material, we will keep this vision and our purpose top of mind. We will remain disciplined in navigating short-term issues while coming through to deliver for the long-term and the long run. To make our vision real requires giving more capital, human and physical. Now and for good, this is exactly what we at Orbia intend to do.

We want to thank our employees for their amazing work, our customers for their loyalty and our shareholders for their continued support.

Best regards,

Juan Pablo del Valle Perochena

Chairman of the Board of Directors

Sameer Bharadwaj

Chief Executive Officer



Sameer Bharadwaj
Chief Executive Officer





About Orbia: a global, purpose-led company.





Orbia's business groups are bound together by a shared purpose: To advance life around the world





Our Purpose and Values

At Orbia, we recognize that we cannot take on the world’s biggest challenges alone. We take a collaborative, human-centered approach to create a better future.

Our shared purpose is:

To advance life around the world.

Our common values are:



Be Brave

We don’t let our fears hold us back. In order to venture into the unknown, we move forward with curiosity and the ambition to create a better world.



Take Responsibility

We realize that our actions have impact. We hold ourselves to the highest level of accountability, never losing sight of the ripple effect we have on each other, our customers and the world.



Embrace Diversity

We know that every voice matters. Every community deserves respect. Every challenge has an opportunity. We are stronger because we bring different perspectives together, united by empathy.

Profile

Orbia (BMV: ORBIA) is a community of companies bound together by a shared purpose: To advance life around the world.

Orbia’s business groups have a collective focus on ensuring food security, reducing water scarcity, reinventing the future of cities and homes, connecting communities to data and information services and expanding access to health and well-being by providing advanced materials, specialty products and innovative, human-centered solutions. Orbia’s business groups span Precision Agriculture, Building and Infrastructure, Fluorinated Solutions, Polymer Solutions and Data Communications. The company maintains commercial activities in more than 100 countries, operations in over 50 and production sites in 37, with global headquarters in Mexico City, Boston, Amsterdam as well as Tel Aviv, and a team of over 22,000 dedicated employees working worldwide.

Orbia trades on the Mexican Stock Exchange (BMV) and it is included in the S&P/BMV Total Mexico ESG Index. Since 2015, Orbia has been featured in the FTSE4Good Emerging Index. Since 2019, Orbia has been an index component of the Dow Jones Sustainability Indices (DJSI MILA Pacific Alliance Index) and recognized by the Latin Trade Index Americas. As of 2021, Orbia’s consolidated annual revenue totaled \$8.8 billion (USD).

Fast Facts

Commercial activities in
100+
countries

119
production sites
(including one active mine)

Operations in
50+
countries

22,000+
employees

4
R&D labs outside of
our production plants



Our Business Groups

Polymer Solutions



Orbia's Polymer Solutions brands Vestolit and Alphagary focus on PVC general and specialty resins and PVC and zero-halogen specialty compounds with a wide variety of applications in solutions that undergird everyday life. Orbia's Vestolit and Alphagary brands supply Orbia's downstream brands and global customers seeking applications in pipes, cables, flooring, auto parts, household appliances, clothing, packaging, health and safety and medical devices.

Building and Infrastructure



Orbia's Building and Infrastructure brand Wavin is redefining today's pipes and fittings industry by creating solutions that last longer and require less labor to install. Benefiting from PVC supply chain integration with the Polymer Solutions brands and its ability to serve customers on three continents. Wavin is also developing sustainable technologies around water management and indoor climate systems for the development of the efficient livable, lovable and resilient cities of the future.

Precision Agriculture



Orbia's Precision Agriculture brand Netafim's leading-edge irrigation systems, services and digital farming technologies enable stakeholders to achieve significantly higher and better-quality yields while using less water, fertilizer and other inputs. By helping farmers grow more with less, Netafim is contributing to feeding the planet more efficiently and sustainably.

Data Communications



Orbia's Data Communications brand, Dura-Line produces more than 400 million meters of essential and innovative infrastructure annually – telecom conduit, cable-in-conduit and other HDPE products and solutions that create physical pathways for fiber and other network technologies to connect cities, homes and people worldwide.

Fluorinated Solutions



Orbia's Fluorinated Solutions brand, Koura provides fluorine and downstream products that support modern living in a vast number of ways. Koura operates the world's largest fluorspar mine and produces intermediates, refrigerants and propellants used in automotive, infrastructure, semiconductor, health, medicine, climate control, food cold chain, energy storage, computing and telecommunications applications.



Our ImpactMark

Our ImpactMark is more than an innovative “living” logo mark—it is a visual representation of our purpose-driven performance year-on-year.

The ImpactMark reflects Orbia’s commitment to advance life around the world by marking our progress on six key performance indicators related to the themes of people, planet, and profit. We update the ImpactMark annually to reflect our progress over three-year cycles, with the outermost rung representing the most recent year.

The 2021 update of the ImpactMark demonstrates Orbia’s ongoing journey towards achieving a more perfect circle.





2021 ESG Highlights





Environment

-10% GHG
Scope 1 & 2 emissions
vs. 2019 baseline

+28%
renewable energy
vs. 2020
(renewables now represent 6% of total
electricity consumption)

-20%
process waste
directed to disposal vs. 2020

New Goal to reduce
Scope 3 emissions by
30% by 2030

First investment in
green hydrogen
in [Verdagy](#)

-6%
water withdrawal
intensity

Social

-19% Total
Recordable Incident Rate
vs. 2020 (employee + contractor)

22% Women
in leadership roles
representing 33% of leadership hires

WASH projects provided
access to water
to **+30,000** people
in Brazil, Colombia, Ecuador, Mexico and Peru.

22,350
employees
in 50+ countries



Sustainable Solutions

Polymer Solutions



First two orders of **bio-based PVC** delivered to customers

Polymer Solutions



Developing a DOTP **plasticizer** and compound series made from **recycled PET**

Building and Infrastructure



Next-gen **AquaCell® stormwater** management solution **makes cities more climate resilient**
100% recycled material and stackable - reducing CO₂ emissions significantly

Precision Agriculture



Launched **Streamline X ReGen™** in Europe, offering the highest-quality recycled driplines in the market

Data Communications



Installation of FuturePath via **MicroTrenching** **reduces environmental disruption by more than 6X** compared to traditional trenching and brings reliable high-speed internet connectivity to communities

Fluorinated Solutions



Advancing battery performance and recycling, with launch of new brand Koflyte®, acquisition of Silatronix and investments in **Ascend Elements**



7 out of 8 transactions by Orbia Ventures in **climate tech**

66% of 2020 revenues contributed to the UN SDGs
See results of our **first assessment**.
Revenue from these solutions increased 24% in 2021





Governance & Finance

\$8.8B
of total revenue
(+55% EBITDA vs. 2020)

Currently our
Board of Directors comprises

67% independent
directors
and **25%** women

First full year applying the
ESG Modifier
for senior
management
compensation

Inaugural
**Sustainability-Linked
Bond** issuance tied to our
SOx emissions target

ESG Indices

Orbia is a member of:

**Dow Jones
Sustainability Index**
MILA since 2019

FTSE4Good Index
since 2015

**S&P/BMV Total
Mexico ESG Index**
since 2012

Proactive engagement with rating agencies combined with strong performance have resulted in significant upgrades in our scores, including with [MSCI](#) and [Sustainalytics](#).

Other external recognition and ratings are available [here](#).



Sustainability at Orbia: solving for the most critical challenges.

At Orbia, sustainability is deeply embedded in our businesses, is a core component of our growth strategy, and drives our culture.





From the way we operate in line with the highest standards, to how our solutions contribute to addressing current pressing challenges, and the way we direct our investments to make long-term positive impact. We believe that advancing solutions to enhance the quality of life around the world delivers business success as well as social and economic value for all those connected directly and indirectly to our activities. Our purpose-led focus on addressing the world's most pressing challenges drives our business agenda and our strategic approach to sustainability.



At Orbia, sustainability is about putting our purpose into action. We have set bold goals and been transparent on our progress. Through close collaboration with all of our stakeholders, I am convinced we will capture value and make positive change—at the speed and scale needed—across our businesses and in our world.



Tania Rabasa
Orbia Corporate Vice President,
Sustainability & Corporate Affairs

Our strategy rests on three pillars, supported by specific action programs:

<p>Sustainable solutions Delivering solutions that enhance the resilience of people, society and the planet.</p> <p>Our solutions contribute to solving some of the world's most pressing challenges:</p> <ul style="list-style-type: none"> Increasing food availability using less water, land and energy. Building cities that are smart, safe, sustainable and regenerative. Connecting and empowering communities through better data access. Supporting innovation to deliver advanced healthcare technologies. <p>Read how our solutions contribute to addressing the UN SDG's here.</p>	<p>Impactful ventures To maximize our contribution to a net-positive future.</p> <ul style="list-style-type: none"> Supporting the development of new businesses and technologies through Orbia Ventures. Driving the transition beyond a net zero world while strengthening our business value through strategic acquisitions. Advancing innovative technologies that promote circularity, climate tech, agriculture and food tech, smart cities and energy storage.
<p>Responsible business Operating in line with the highest ethical standards, accountability, responsibility and transparency.</p> <p>Environment • People & Communities • Health & Safety • Supply Chain Governance & Risk Management • Ethics & Compliance • Stakeholder Engagement</p>	

For further information:

- [Sustainability Policy](#)
- [Climate Action Framework](#)





Science-Based Strategy

Our strategy was developed from an evidence-based assessment of our top material sustainability topics, which align with our purpose and capabilities to advance life around the world.

As part of our materiality assessment, we engaged globally across 50 countries with hundreds of stakeholders (shareholders, employees, customers, suppliers, authorities and civil society), to solicit their views on Orbia's most significant economic, social and environmental impacts, relevant trends and expectations of our business. The results yielded material sustainability topics both at the corporate and at the business group level, for which we aim to establish science-based targets where relevant.

Our continuous assessment of material topics integrates the concept of double materiality, considering the interconnectivity between the financial and non-financial perspectives, as promoted by the GRI and SASB standards. This comprehensive view enables a more integrated approach to evaluating the material impacts that sustainable development has on Orbia, as well as the impact that Orbia has on sustainable development.

Orbia's Top Ten Material Sustainability Topics

Click to go to these sections.

SUPPLY CHAIN	PRODUCTS	PEOPLE & COMMUNITIES	ENVIRONMENT
 Sustainable sourcing	 Solutions for resilience	 Health & Safety	 Circular economy
 Quality & safety of products	 Innovation	 Employee development, engagement & retention	 Emissions
		 Investment in local communities	 Water use & discharge

Additionally, in response to the major global shifts that have occurred due to the COVID-19 pandemic, we conducted an internal assessment in 2021 to reevaluate the significance of our material topics considering the pandemic. We confirmed that our material topics are still valid and applicable to a rapidly changing world. We will continue to reassess our material topics periodically when significant changes occur to the Orbia business.

As part of our processes, we continuously review risk mitigation strategies for material topics, which allowed us to navigate the pandemic with minimal disruption to the areas that matter most to key stakeholders.

For further information:

 [Materiality Assessment Results](#)





Sustainability Governance Structure

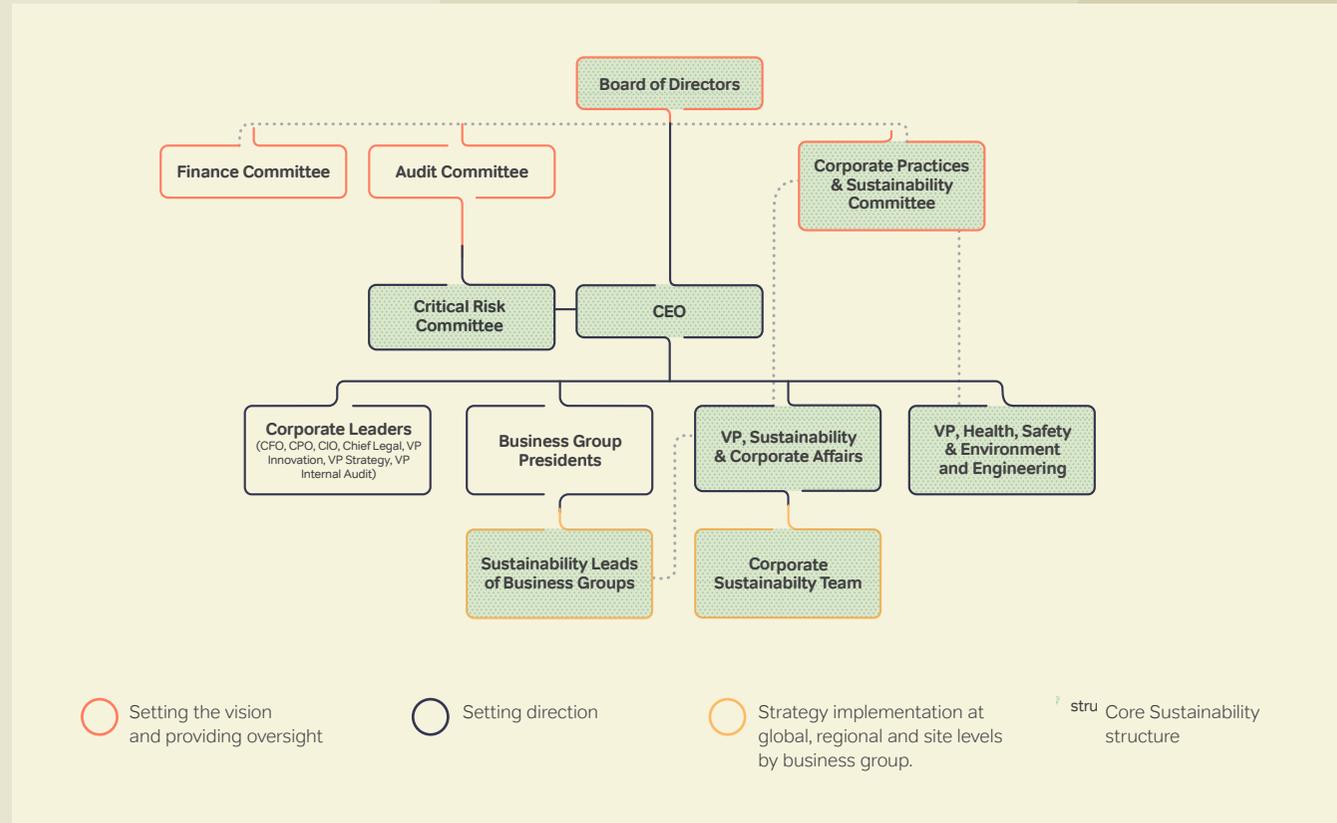
To ensure implementation and encourage collaboration across business groups, Orbia’s Board oversees and provides guidance on Orbia’s ESG strategy previously reviewed by the Corporate Practices & Sustainability Committee. Our Vice President (VP) of Sustainability briefs and updates the Committee regularly, while providing progress on our goals on a quarterly basis.

Orbia manages sustainability efforts through a matrix structure, with leadership and functional specialties held at global and corporate levels.

Orbia’s VP of Sustainability is a member of the leadership team, along with Business Group Presidents, CFO and other key functional leaders.

Each business group drives sustainability throughout its business, working closely with the corporate sustainability team to implement corporate programs alongside business-specific opportunities. Regular communications are shared with all employees via Town Hall meetings, and sustainability goals and targets are part of everyone’s objectives and embedded into executive and senior management compensation.

In 2021, we established the **Sustainability Council** to construct, implement and take ownership of Orbia’s sustainability strategy, informed by internal and external



best practices, and leveraging opportunities for cross-business cooperation where performance improvement can be accelerated. The council is composed of sustainability leads from all our business groups as well as operations experts.

The council is currently comprised of thematic sub-groups, including decarbonization and circularity. These groups identify ways to incorporate impactful sustainability strategies across the business groups, and report on their progress to the Sustainability Council.





Commitments and Progress

Baseline year is 2019 for all our goals, except SOx emissions. The baseline year established for SOx emissions is 2018, as 2019 was an atypical year in terms of operations at our main contributing site, due to a one-month planned shutdown for maintenance.

Impact Area	Goal	Target Year	Baseline	Performance in 2021
Climate Change	Achieve net zero carbon emissions	2050	2 million tons CO ₂ e	1.81 million tons CO ₂ e ✓
	Reduce Scope 1 and 2 GHG emissions by 47%*	2030	2 million tons CO ₂ e	1.81 million tons CO ₂ e ✓ (-10%)
	Reduce Scope 3** emissions by 30%	2030	90 million tons CO ₂ e	82 million tons CO ₂ e ✓ (-8%)
Air Emissions	Reduce sulfur oxides (SOx) emissions by 60%	2025	1,355 tons	1,075 tons ✓ (-21% versus 2018)
Environmental Management	100% of sites certified with an environmental management system	2025	55% (70/127 sites)	61% (73/119 sites)
Waste	100% of plants will send zero waste to landfill**	2025	24% of plants	39% of plants ✓
Safety	Total Recordable Incident Rate (TRIR) below 0.2 total for employees and contractors	2025	0.71	0.61 ✓

Notes

(✓) Figures with this symbol are third party assured.

* Pending submission to the Science Based Target initiative (SBTi), and subsequent approval

+Goal covers categories 11 (use phase) and 12 (end of life), which represent more than 90% of our Scope 3 footprint

** Orbia adopts a definition of Zero Waste to Landfill that is 90% diversion of production-related waste sent to landfill or incinerated without energy recovery





Sustainable Solutions: advancing a net zero economy.



These are just a few examples of the steps we are taking to address climate change and contribute to a more resilient planet. It is my personal belief that the actions of this generation will lay the foundation for the world of the future.”



Sameer Bharadwaj
Orbia Chief Executive Officer





Contributing to the UN Sustainable Development Goals

Because our business aspires to benefit global sustainable development and deliver solutions to the world's most pressing challenges, we pledged support for the United Nations' Sustainable Development Goals (UN SDGs). We determined which of the 17 SDGs we can most effectively contribute to, and have aligned with eight that represent the greatest opportunities for Orbia to make an impact.

Our products and solutions support multiple industries essential for daily life and provide avenues for the ways in which we directly and indirectly contribute to the UN SDGs. We develop solutions to provide better access to clean water; grow more with less; cleaner and well-functioning cities, or get connected to the internet so people can have better access educational and social services.

In order to assess how and to what extent our solutions contribute to the SDGs and their targets, we have carried out an initial identification and assessment of the value delivered by Orbia's products and solutions, using existing methodologies and definitions as a basis.

The results of this first assessment found that 66% of our 2020 revenue across business groups either directly or indirectly contributed to advancing the UN SDGs. In 2021, our revenue from these solutions increased by 24%.



Feeding the world sustainably



Making health and well-being more accessible



Ensuring water security, access and sanitation



Providing energy efficient products and services



Empowering communities with data



Making cities more resilient and livable



Developing low/free carbon products



Mitigating our impacts on the climate

Our methodology was reviewed in collaboration with KPMG Mexico. See full report [here](#).



Orbia's first assessment of how our businesses impact the UN SDGs presents solutions to some of the most basic problems facing humanity. We are aware this is only the first step towards better measuring our impacts, but its extremely gratifying to know we are positively impacting people and the planet."

Cecilia Valdes

Orbia Head of Sustainability Reporting



Advancing Resilient Cities

2021 was our first full year in partnership with the Resilience Cities Network (R-Cities), a leading city-led network that brings together global knowledge, practice, partnerships, and funding to support building safe, resilient, and equitable cities. Through our brands Wavin, Netafim and Dura-Line, we will work with R-Cities members to develop innovative solutions to ongoing challenges such as transportation infrastructure, water supply, urban food systems, and connectivity design to enhance urban quality of life. These initiatives will aid progress towards three UN SDGs.

Our joint objective is to develop a co-creative space to confront city challenges with company competencies in search of novel solutions. In 2021, we identified pilot cities for a pre-competitive, public-private innovation approach. In 2022, we will engage with three major cities to test this approach: Medellin, Colombia, Oakland, U.S. and Rotterdam, the Netherlands. We plan to capture the results in innovation white papers that will set the stage for further solution building and implementation.



For further information:

 [Sustainable Solutions Report](#)

 [Orbia and Resilient Cities Network](#)



Impactful Ventures

Our purpose, to advance life around the world, is our inspiration; innovation is our springboard.

We will not solve the world's most pressing challenges by doing what we have always done. We will only create a resilient future by pushing the boundaries, not only of science and technology, but also of our own imagination and determination. We need to adopt a mindset of innovation that becomes a natural part of the way we do things across the entire organization.

At Orbia, we believe that a culture of innovation will drive resilient solutions for people and for the planet. In 2021, we made new strides in advancing our commitment to innovating for long-term positive impact. With our increased investments in cutting-edge startups and the expansion of learning opportunities and innovation incubators, we have truly defined what it means to have a culture of innovation. A culture of innovation is instilled throughout the company with our employees instrumental in driving this mentality of continuous improvement across the business groups. We continue to work together to make innovation an indistinguishable part of the Orbia culture, notably through our ImpactMark campaigns.

\$68.5 million invested in innovation and R&D in 2021.

Orbia Ventures

Our \$130 million USD venture capital fund, [Orbia Ventures](#), invests in and collaborates with startups that aspire to advance life around the world. In 2021, we screened over 700 investment opportunities and conducted due diligence on more than 20 promising startups that offer new technologies in one of our defined focus areas:



Agriculture and food tech



Building and infrastructure



Circular economy



Energy storage



Smart Cities



Climate Tech



We invest in technologies that change how we impact the world—from agriculture, to lithium-ion battery recycling, to water conservation. And we do it in great collaboration, both with people from Orbia and exceptional people outside of Orbia that develop those technologies.”



Shai Albaranes

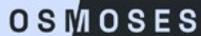
Orbia Corporate Vice President, Innovation & Ventures



During the year, Orbia Ventures completed eight transactions, out of which seven were climate-focused investments, including:



Ascend Elements is sustainably transforming the world's lithium-ion battery supply by recycling cathode materials that help meet the needs of battery cell manufacturing. This process contributes to the transition to clean energy, while advancing the circular economy. This investment aligns with our efforts in advancing lithium-ion battery technology.



Osmoses is developing advanced molecular filters for chemical separations, which can be applied to carbon capture and natural gas purification in a cost-effective manner. This award-winning technology dramatically reduces industrial energy consumption while accelerating the adoption of clean energy solutions.



StormSensor offers a cloud-based stormwater monitoring platform designed to offer real-time data and insights on flow and flood risk to the water utility industry. This technology helps users manage stormwater, sea level rise, and pollution. StormSensor is designed to help cities adapt to the impacts of climate change by planning for sea level rise through real-time and predictive data. These services align to our offerings in water management and climate adaptation solutions.



Hero Labs is a developer of intelligent water consumption and leak detection technology that is designed to prevent property damage and reduce water consumption. Their integrated pressure sensor is able to detect the smallest of leaks and its smart shut-off valve can isolate the incoming water supply in seconds. This award-winning technology aligns with our mission of applying advanced technology solutions to building infrastructure and water management.

Educating for Innovation

Our Innovation Academy drives Orbia's innovation culture through upskilling and training. In 2021, hundreds of employees engaged in more than 9,000 hours of specialized training, webcasts and lectures including Rapid Prototyping, Advanced Analytics, Circular Economy, Open Innovation and more. These sessions use innovative methodologies dedicated to quick learning and experimentation while developing ideas, products and services

**Total innovation-related training hours,
including advanced analytics:**

+9,000
hours

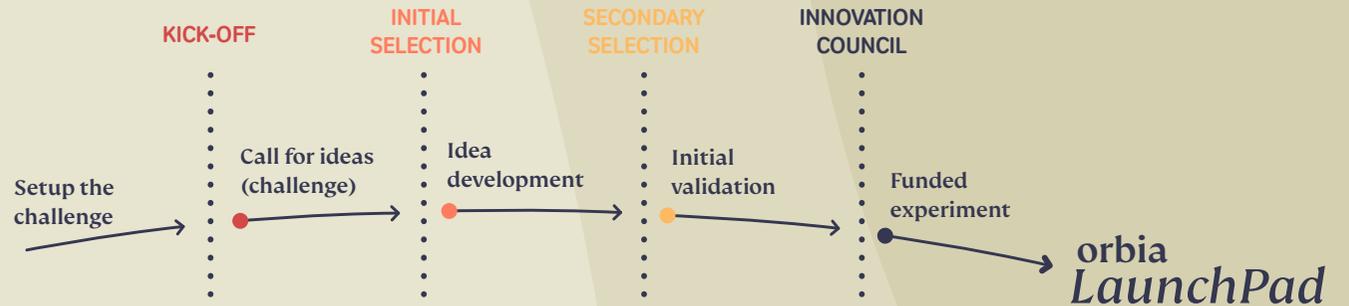
for
653
people across Orbia in 2021



Empowering Intrapreneurship

Our internal innovation program, LaunchPad invites Orbia employees to suggest value-generating ideas that may receive development funding and support. LaunchPad has already resulted in high levels of engagement and collaboration, with more than 1,450 ideas submitted from 7,500 participants. These efforts have resulted in 40 innovation ideas currently under implementation, and six fully implemented ideas, which are projected to deliver over \$10 million USD in value by 2023 and over \$50 million USD in value over the next five years (through efficiencies or new revenue). This innovation accelerator empowers Orbia employees to engage in supporting the delivery of resilient solutions for our customers in different sectors, further driving our culture of innovation and contributing to the attraction and retention of top talent.

Launching an Innovation Culture



10K employees visited the Orbia Launchpad submission platform> **1K** employees teamed up to submit over> **1,469** new ideas

11 Orbia Launchpad business group challenges from 2019 through 2021> **40** Ideas under implementation creating potentially> **\$10M** USD in projected outcomes





Safety and People First

At Orbia, our defining advantage is clear
—our people— over 22,300 are the drivers
of our success.

We are dedicated to creating inclusive, healthy and safe environments for our employees, contractors and communities. Both our purpose and values mean that we are committed to the development and wellbeing of people, inside and outside Orbia, by pursuing positive long-term impact in everything we do.





Health & Safety

Following five years of impressive reduction in recordable incidents, shown in our Total Recordable Incident Rate (TRIR) trend, our 2020 performance suggested that we had plateaued.

Accordingly, we took action to drive a business-led and operations-focused approach to safety. We are pleased that our 2021 results indicate that we are back on the improvement path to zero accidents.

Orbia's corporate Emergency Response Management standard requires facility-level plans for managing all occupational safety, process safety, natural hazard or security events, and minimizing their consequences.

Business-specific safety

Our business-led approach to safety recognizes that the on-the-job risks that our employees and contractors face are concentrated in our operations. For example, the specific approaches taken in a Precision Agriculture business are necessarily different from those required in a high-hazard chemical operation. Accordingly, we have positioned our HSE resources directly in our business groups. This ensures that the understanding of excellent best practices and accountability for implementation and the delivery of the expected results are clear.

Focused learning and improvement

One key activity at the center of each business group's approach is a systematic, intense learning review

of recordable incidents and serious near misses. In these reviews the CEO, business group President, and Corporate HSE VP engage directly with the operations leads and the root cause investigation teams and operations leads to probe findings and corrective actions. This approach drives focus on learning and promotes rapid sharing of best practices. The Corporate Practices and Sustainability Committee also oversees performance, reported by the HSE VP every quarter.

Fostering a safety culture

A culture of excellence in health and safety requires clarity of vision and comprehensive engagement from the executive to the shop floor. In 2021, our chemicals businesses developed their Fundamentals of Safety to ensure that every employee has a deep understanding of our aspirations, expectations and responsibilities. Our non-chemicals businesses will embark on a similar journey in 2022. These fundamentals formed the center point of shop floor safety meetings and toolbox talks around the world throughout the year.



In 2021, as we continued to focus on the safety of our teams, we are pleased that we saw a 19% reduction in total recordable incidents versus 2020. However, no achievement compensates for the loss of two of our colleagues to an incident this year. We will keep working relentlessly to achieve our goals toward zero and avoid future incidents.”



John Branan

Orbia Corporate Vice President, Health, Safety, Environment & Engineering



Note: 2019-2021 data includes Orbia employees and contractors in all businesses.





Fundamentals of Safety



1. All injuries, occupational illnesses, and HSE events can be prevented



2. Health, Safety and the Environment are part of every decision we make



3. Working safely, with respect for health and the environment is a condition of employment



4. People are the most important elements of the HSE program



5. Leadership is responsible for HSE implementation



6. Everyone is expected to identify, assess and control operational hazards / risks



7. Everyone must maintain the necessary skills to work safely and protect the environment



8. We seek to continuously improve our operational and HSE performance



9. We investigate all events and share the learning across the organization



10. Everyone has the authority and responsibility to stop unsafe work

COVID-19

In 2021, we deployed a three-pronged approach to keeping our employees safe during the pandemic:

- Promoting vaccination by improving access, availability, and incentives. In Colombia, Orbia, procured and distributed over 5,000 doses of vaccine to our employees, contractors, and the surrounding communities.
- Ensuring world-class protocols for infection mitigation are in place for our essential manufacturing staff. These mitigations include masking, entry checks of temperature and symptoms, reconfiguring of work to ensure physical distancing and hygiene (respiratory, hand and surfaces).
- Implementing infection-rate based policies to manage and calibrate on-site versus remote work and business travel.

Our approach is nimble and science-based. We continue to evolve our approach to incorporate new information and best practices to keep Orbia as an industry leader in employee health.



Process Safety

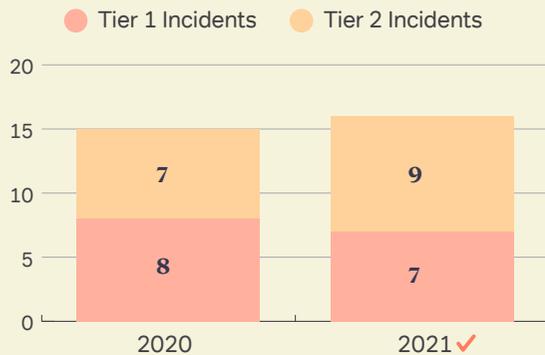
In 2021, we deployed corporate process safety subject matter experts (SMEs) directly into our chemicals businesses to understand and promote the rapid implementation of the best tools and practices.

An operational model for process safety is an integral part of our chemical plants. The model, shown to right, provides a foundation for our chemical plants. Business-driven process safety KPIs are set and tracked.

Our investment in the Sphera Advanced Risk Assessment tool is now driving excellence in our Process Hazard Analysis program. We anticipate full implementation of a computer-based Management of Change module in 2022 to further enhance our standardization of world-class methods.

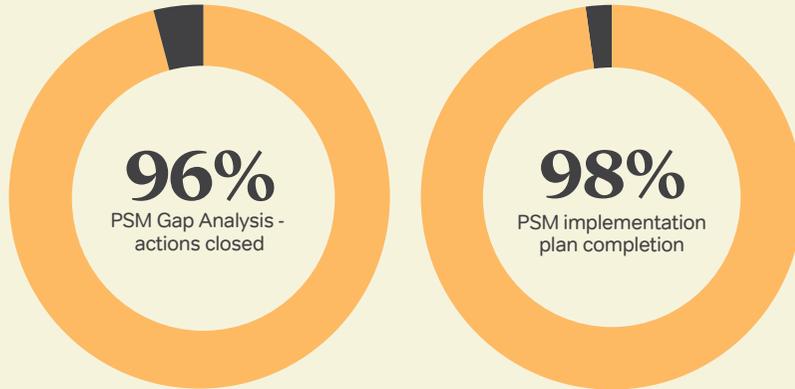


Orbia Process Safety Events





Vestolit 2021 Process Safety Management (PSM) Performance



Safety Certifications

Orbia is implementing internationally recognized management systems in all of our facilities to ensure disciplined adherence to standards with a focus on continuous improvement. In 2021, 74% of Orbia's sites were certified to international safety standards such as ISRS, ISO 45001, or OHSAS 18001. While currently non-certified sites apply the same standards of care, all sites will have such certification by 2025. External audits are carried out at least every three years as part of these certifications.



Product Stewardship Approach

Maintaining compliance with key standards and good practices is how we operate. We have staffed our business group teams with SMEs to ensure full compliance across our wide range of geographies and products.

Across Orbia, we remain focused on opportunities to reduce environmental and health risk in our product lines. Human health and environmental risk assessment have been conducted on 61% of products (in terms of revenues) to determine their potential impact. The majority of these products come from our higher-risk businesses Koura, Vestolit, Alphagary, and Dura-Line.

We currently comply with the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) requirements for all substances produced or imported in Europe for all relevant operations across Orbia. Six percent of products (in terms of revenues) contain restricted substances in the Annex XVII of REACH. We use no regulated substances of Very High Concern (SVHC) as defined by REACH legislation, or by the European Restriction of Hazardous Substances, or substances of international concern (RoHS) in our Koura, Vestolit and Dura-Line businesses. The Candidate List of substances of very high concern (SVHC) for Authorization above 0.1% by weight are in 2% (by revenue) of our products. Alphagary has taken a targeted approach to finding viable replacements for phthalate-based products.

At Orbia, we also support and adhere to the Strategic Approach for International Chemicals Management (SAICM) of the United Nations Environmental Program (UNEP), which promotes the transparent exchange of data and information using a life-cycle approach.





Caring for our People

Our defining advantage is clear—our people—over 22,300 are the drivers of our success.

By bringing together our best and brightest minds, capabilities and individual experiences, we are globally creating a culture of innovation, agility and collaboration that drives new solutions for a sustainable future. On the People team, we are working to do just that by creating enduring experiences for our community members, made up of moments that matter.

Engaging our Colleagues in Making an Impact

In 2021, more than 3,000 Orbia employees participated in our ImpactMark 2.0: Moving the Mark campaign, focusing on building upon our 2020 commitments to taking action to move our ImpactMark. Over 2,300 participants, 25% of Orbia employees with email access, joined our workshops facilitated by +400 Transformation Ambassadors. These workshops allow employees to discuss ideas and translate those into program plans, creating an impact in one of our six ImpactMark indicators.

+100

Workshops Conducted

+500

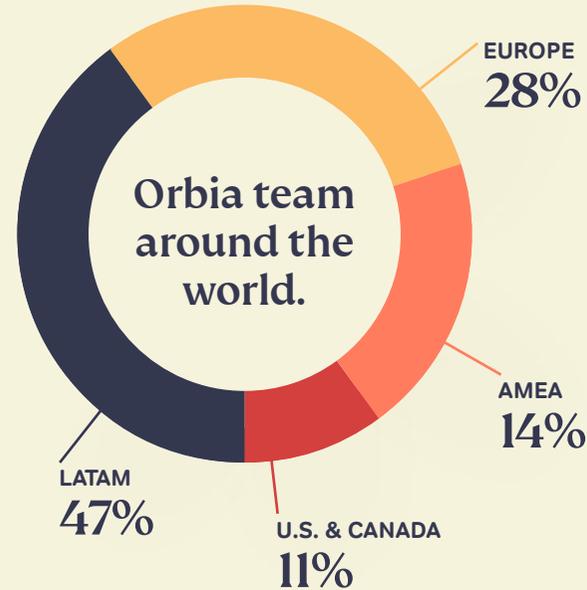
Program Plans Submitted

Our Global Team in 2021

22,350
colleagues in 50+countries

>4,600
new colleagues hired

>380,000
hours invested in learning and development ✓



Women are

22%

of our Leaders ✓ and

30%

of our professionals

24%

of colleagues are aged over 50

(✓) Figures with this symbol are third party assured.



People Strategy

In 2021, we continued to foster a diverse team and inclusive community spirit that harnesses the contributions of all employees in a unified mission. By working attentively to understand and address the needs of our employees, we continuously create a strong global platform of engagement, value creation and sustainable growth.

Creating enduring experiences for our employees, made up of moments that matter.

Our People Strategy



Fulfillment

What makes me happy?

Fostering an inclusive culture where our people can thrive through connection to each other and our common purpose



Development

What helps me grow?

Providing learning, training and leadership resources to support individual growth and collective future fitness



Well-being

What makes me healthy?

Offering tools and experiences that promote wellness, balance and autonomy for our people

Supported by

Getting the Basics Right

Delivering fair and competitive compensation, offering attractive benefits, deploying the right individuals in the right roles, tailoring our recruitment processes to bring in diverse talent, fostering a values-based culture and upholding compliance with regulation and business standards.

In 2021, we continued to incorporate new practices in alignment with our People Strategy pillars:

Fulfillment: To fuel our creativity and productivity, we are invested in creating a work environment where everyone can show up as their authentic selves. From offering employee resource groups to hosting diversity discussions to developing our volunteer program, we are putting fulfillment front and center.

Development: When we invest in continuous learning, we can tap into the advantage of resilience in a changing world. From providing a global learning and development offering to providing on-demand learning coursework as well as on-the-job training, our commitment to development is evident in our programs and practices. An example is the popularity and access to LinkedIn Learning that focuses on the development of business, technology and leadership-related skills through expert-led course videos. More than 5,000 training hours were invested in this development platform, helping the development of over 2,600 employees.

Well-Being: When we are our best selves mentally, emotionally and physically, we are better contributors at work and beyond. Cultivating well-being is a priority at Orbia, whether through offering opportunities to engage with leaders who are wellness role models, creating interest-based conversation channels or supporting hybrid work arrangements.



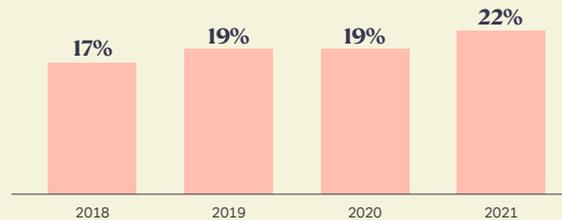
Fulfillment: Diversity, Equity and Inclusion

We are committed to creating a diverse, equitable and inclusive working environment, in which employees are able to fulfill their potential and maximize their contribution.

This year we prepared the launch of our Women Employee Resource Groups (ERGs) for Q1 2022. The purpose of these groups will be to connect, inspire, engage, develop and support women. Additional initiatives will come in 2022, including an assessment of our Diversity, Equity and Inclusion (DEI) culture, to help reinforce our action plans and prioritize efforts for the coming years.

The number of women in leadership positions increased from 19% in 2019, to 22% in 2021. Additionally, women accounted for 33% of our leadership hires this year at Orbia, with three of our business groups hiring more than 40% at this level.

Women in Management



The number of women in management and professional roles at Orbia is steadily increasing each year: 5% increase between 2018 and 2021.

DEI Training and Guidance

Sessions aimed at understanding and reducing Unconscious Bias at Orbia corporate as well as business group levels were conducted during the year. We encouraged employees to leverage the resources on this topic that were made widely available through our learning platforms and internal information hubs. To reduce bias and ensure gender diversity in recruitment processes we defined Targeted Talent Acquisition Guidelines that will be in effect as of 2022.



Diversity is one of Orbia’s greatest strengths, and we are more committed than ever in creating an inclusive environment that values and supports the growth of every employee to bring their best self to their work. Our initiatives are resulting in progress and ensuring we are living up to one of our most important Orbia values – embracing diversity.”



Deb Butters
Orbia Chief People Officer



We are Orbia #WithPride

We raised awareness, promoted and celebrated occasions like International Women's Day and Pride Month. Our month-long diversity-focused campaign in June ran under the tagline of We Are Orbia #With Pride and invited employees to participate in a number of activities to celebrate and create a diverse, equitable and inclusive Orbia. Employees participated by sharing their personal quotes and stories related to DEI, using DEI-promoting purpose-made backgrounds during video calls and engaging in various DEI webcasts, including the event on Race in the Workplace organized in partnership with McKinsey & Company.

Inclusion in action

Netafim welcomed two new employees at the Hazerim factory; a colleague with hearing loss, and another with visual impairment. Making the plant accessible for all our workers and ensuring the integration of people with disabilities brings great value to Netafim, and helps our workers realize their own potential.

Orbia Helping Refugees

We believe that through a diverse workforce and a culture of equity and inclusion we can make a difference. That is why we have invested in hiring and training refugees from around the world.

Together with the [TENT Partnership for Refugees](#) and their global network, we identified an overlap of refugees with strong hiring needs in our operations. This year we hired 30 refugees in our operations in Brazil, Colombia and Mexico.

Read more [here](#).



Development

Our Digital Learning Platforms encourage employees to engage in over 17,000 courses in leadership, project management, remote work, DEI, etc. In 2021, more than 3,000 employees at various levels benefited from our digital learning platforms, including Harvard Spark and LinkedIn Learning, and significantly more – from our custom-made courses on our learning management system and information hub. Compared to 2020, the average training hours per employee invested in digital, innovation and leadership skills increased 112% to approximately 7 hours per employee in 2021.

Total hours spent on leadership, innovation and digital skills education

84,353

Orbia Pulse

5,831

In Learning

8,789

Harvard Manage Mentor SPARK

Our flagship year-long career development e^{XP} Program became more collaborative through team working to address important business challenges, while learning not only from the Mentors, Experts, and Project Leaders but also from each other.

Our second e^{XP} cohort started in 2020 and concluded their participation in November 2021. The cohort was comprised of:

48

Participants

70

Mentors

45

SMEs

As the leader of three e^{XP} program members for Dura-Line’s Circular Economy project, I witnessed the power of leveraging our talent throughout Orbia.”

Homero Endara

Director of Global Product Management and e^{XP} Project Leader, Dura Line

e^{XP} Program Pillars



Education

Participants engage in coursework over two semesters to enhance their leadership skills.



Experience

Participants steer two six-month projects that address complex and relevant business challenges.



Exposure

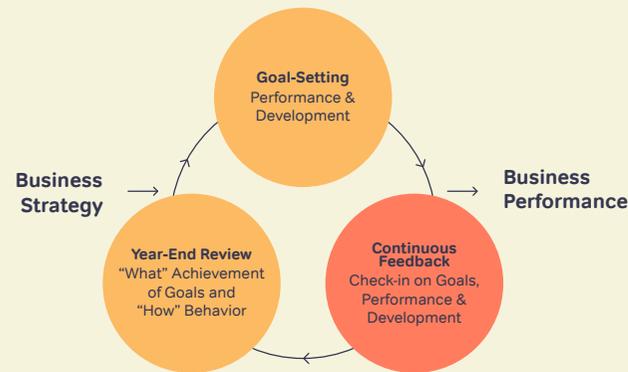
Participants have the opportunity to learn from Orbia’s senior leaders, mentors and subject matter experts.



Performance Management

All office-based employees in Orbia take part in the annual Performance Management Process. As part of our continuous improvement processes, in 2021, a diverse group of leaders provided feedback and insights on potential improvements. Based on this, a new and advanced iteration of our Performance & Development Process will be launched in 2022, increasing the focus on employee development and continuous feedback to better align the whole organization across common goals.

Continuous Feedback



Well-Being

Taking the pulse of employee well-being

Orbia conducted our first company-wide Mental Health and Well-being survey during April 2021.

 **5,700** employees participated

 The survey was conducted in over **20** languages

 Employees from **46** countries responded

Employee responses highlighted areas in which we are doing well, and helped move our focus and efforts to areas that need further attention, in order to design and implement actions targeted at the roots of opportunities. Business group leaders, People and HSE teams partnered to create and execute action plans to help manage the mental health and well-being of our people. Some of the specific initiatives implemented are guidelines for virtual behavior, work from home guidelines, coming back to the office procedures, mental health first aiders at each location, and training and coaching to management, among others. Employee Assistance Programs (EAP) provide employees access to medical and psychological assistance for them and their families at no cost. Each of the business groups has conducted regular pulse surveys to monitor the quality and effectiveness of the action plans. We want our people to be at their best!

During 2021, we held 15 **Global Guided Meditation** sessions, providing a space for our employees to take a break from their busy schedules to unwind and re-focus. These sessions have helped more than 3,000 employees globally find ways to manage stress and relieve tension. We have created a community in which self-care and self-awareness are as important as anything else.

People Function Ideation Process

As a team, with the same mission to build a people-centric culture at Orbia, we believe the best way to bring this strategy to life is to collaborate, ensuring all People function members can contribute to creating enduring experiences for our employees and making our strategy real.

This year we launched our Moments That Matter initiative: a global ideation process for the People team to build together a wish list, where People team members had the opportunity to collaborate with other colleagues and submit ideas for what they believed will drive impact for our people at Orbia.

97 ideas submitted
Teams from more than **20** countries participated
More than **100** colleagues submitted ideas either individually or as teams

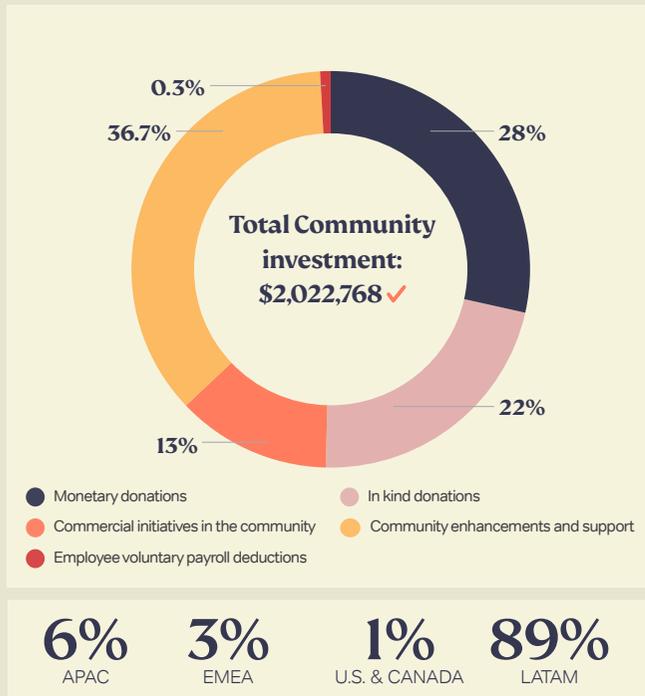




Thriving Communities

At Orbia, we fulfill our purpose through our solutions for resilience that address the world’s most pressing social and environmental challenges.

Both our purpose – to advance life around the world – and our values mean that every Orbia operational site is committed to the development, well-being and improvement of our local communities. We contribute to strengthening communities through collaboration, partnership, and the pursuit of longer-term positive social impact.



Community Engagement

At Orbia, we share a responsibility to contribute to improving the living conditions of the communities in which we operate. We engage with representatives of stakeholders in our communities to gain insight that will help us address their needs, concerns and expectations. Additionally, we are currently working with a set of tools to support our operations in assessing risks and mapping their stakeholder groups to define strategic approaches for engagement.

Business group highlight: Koura’s community engagement

Community engagement is a key element in Koura’s business and stakeholder engagement strategy.

Koura’s mining operations have been working with nearby communities to support local needs and engage with different stakeholders. In 2015, Koura expanded its community engagement strategy to support local development and constructive dialogue. Over the course of several initiatives, this dialogue and operational continuity has improved and Koura has placed agreements with community members at the center of its social engagement program.

In 2021, to continue strengthening its program, Koura began defining an improved and comprehensive Corporate Social Responsibility (CSR) & Community Engagement Management System. As a first step, a third-party audit on social engagement was carried out, and a social impact assessment was started within Koura’s influence zone. In

addition, key elements of the management system were reviewed and updated, including: organizational structure, stakeholder mapping tool, and community interaction mechanism.

Koura’s priority of consistent and open dialogue with local communities has included public assemblies in two rural communities near its mining site in San Luis Potosí, Mexico. As a result of this dialogue, Koura opened a second Community Office in Ejido Santa Catarina, in addition to the existing La Salitrera Community Office. Koura is also sponsoring the inclusive and participatory development of a five-year Community Development plan for La Salitrera, to be completed in 2022.

Helping communities thrive means facilitating opportunities for capacity building and technical assistance. Since 2019, Koura’s local business partners have held entrepreneurial training programs, resulting in new business development success stories where, in some cases, these new community-based endeavors have become Koura suppliers. This project will resume activities in 2022 with a local supplier’s business incubation training program.

For 2022, Koura’s primary objective is to continue building its CSR & Community Engagement Management System and replicate the first basic elements in all its sites, with a focus on mining operations.





6 CLEAN WATER AND SANITATION

WASH (Water Access Sanitation and Hygiene)

At Orbia, we understand the relevance of water as a key source for development. Our expertise and focus are on improving water conservation and access as well as developing sanitation infrastructure. We provide solutions in access to water, sanitation and hygiene to mitigate the deficit in coverage and quality of provision of basic WASH services for communities in Latin America through the development of strategic alliances with project partners in the communities.

In 2021, Wavin developed 23 WASH projects that provided water access to more than 30,000 people in Brazil, Colombia, Ecuador, Mexico and Peru.

This included 197 clean water storage tanks (total capacity of 228.900 liters) and 17 hand-washing stations. The Wavin engineering teams also provide technical assistance in the design and execution of WASH projects to serve communities.



Improving sanitation in Colombia

Wavin carried out a project focused on communities neighboring our facilities in Colombia, in alliance with the NGO Techo Colombia. This initiative enabled the construction of domestic hydrosanitary infrastructure for families in vulnerable conditions, increasing access to basic sanitation and hygiene services for the communities, and therefore contributing to improved quality of life. Wavin's engineering and technical services got involved to provide advice and design validation. The project was further supported by the participation of volunteers who put their knowledge and dedication at the service of the communities.

Access to safe water in Peru

The city of Cerro Colorado is home to 40 soup kitchens that serve over 4,000 people. Thanks to the joint efforts of Wavin, the Municipality of Cerro Colorado, SEDAPAR, and the NGO Agualimpia, this project will ensure that 15 soup kitchens located in the most vulnerable areas of the Cerro Colorado district can access safe water for hygiene and food preparation for more than 600 people every day.

Water Funds to promote water security

Orbia's business groups also address water scarcity by supporting Latin American Water Funds Partnership in Mexico, Brazil, Peru and Colombia. These Water Funds design and promote financial and governance mechanisms, engaging public, private, and civil society stakeholders in order to contribute to water security through solutions grounded on nature-based infrastructure and sustainable management of watersheds.



STEM (Science, Technology, Engineering & Math)

Orbia is a strong supporter of scientific, technological, engineering, mathematical (STEM) education. We believe that fostering STEM skills, particularly in the youth, is essential to achieve our purpose and promote societies that are more equitable. Every business group within Orbia has incorporated programs to assist the acceleration and promotion of STEM Careers.



The Green Project

The Green Project is Netafim's new educational program, conducted jointly with the Israeli Ministry of Education, which aims to develop girls' technological skills in the fields of agriculture, sustainability, and industry. This project encourages girls to solve problems using techniques they formulate under the guidance of an all-female Netafim volunteer team.

Story of an Engineer Project

For the first time in 2021, Netafim partnered with leading technology institutions in Israel to sponsor a narrative competition in order to instill a sense of capability in children from an early age. This project sponsors a story, video and comics competition with an engineering twist designed for third and sixth-grade students from all over Israel. Participants write a story, direct a video, or draw an original comic, which entails the protagonist using engineering, science, or technology to solve a problem or overcome a challenge. The competition winners will be announced in March 2022.

Boomerang Scholarships

Becas Boomerang supports the advancement of women in STEM by providing tuition and English language courses during the full length of their studies. Vestolit and its employees joined efforts to contribute to the scholarship program to support two women studying for STEM careers in the Pasacaballos community in Colombia. It is expected that the two winners of this scholarship will be able to participate in Vestolit's Cartagena internship program and join their workforce.

Jugend Forscht Regional Competition in Germany

Vestolit sponsors the annual Youth Research Competition to promote STEM education and career trajectories, with nine out of ten competition winners continuing their studies in scientific, technological, engineering, mathematical or medical subjects.



Nutrition Gardens

Netafim has a history of supporting the adoption of community gardens to improve the health and economic wellbeing of families, by increasing consumption of vegetables while building farming skills in under-served communities.



Therapy gardens in Chile

Netafim has partnered with the PAR Foundation, which runs schoolhouses in Chile to provide education and promote the social integration of people with mental disabilities. A food garden was established to benefit the 31 residents of this schoolhouse by providing a therapeutic outlet and skills to achieve financial independence.

Improving farming technology in underserved communities

In many rural areas of Puno in Peru, the intense cold temperatures do not allow locals to produce their own food. Netafim, in alliance with the NGO KUSIMAYO, aims to transform the subsistence economy to an economy of entrepreneurs. The Productive Puno Program will train thousands of families to use our electric-powered water tanks to optimize their crop yields in their organic gardens. Using these tanks supports a range of crop production including tomatoes, carrots, turnips, beets, chard, cauliflower, pickle, cabbage, lettuce, watermelon, and melons. We continued our support to the program in 2021, and to date we have supported 35 families. We hope to continue contributing to the community through the implementation of more organic gardens and efficient technology.

Community gardens for the homeless

Located in Los Angeles, California, Netafim's GrowGood Farms produces fresh fruits and vegetables to support the neighboring Salvation Army Shelter, which houses and feeds over 500 homeless people daily, many of them veterans. Residents and beneficiaries from the Salvation Army Shelter work on GrowGood Farm to both provide fresh and healthy food for the Shelter, while also developing skills that can be used to help integrate themselves into the employment market.

Reforestation

Successful farming relies on healthy soils and Netafim continued its reforestation initiatives to preserve soil health and capture carbon, to complement its efforts in food and nutrition. In 2021, Netafim planted more than 36,600 trees in California, Brazil and India.



Resilient Housing

Orbia is an infrastructure-focused business, so city resiliency and housing are critical aspects of our corporate social responsibility strategies. We believe that everyone should be able to live with dignity in a place they can call home. In 2021, we continued our efforts to make this reality for many.

Eco-Housing units in Colombia

Vestolit is working in coordination with United Way Colombia and the TRASO Foundation to reduce the housing deficit through in-kind donations of PVC housing units with principles of eco-design and circularity. The construction of infrastructure made of PVC reduces energy consumption, increases thermal comfort, and reduces the environmental footprint by 40% and on-site waste by 60%.

Volunteering

Community involvement is an intrinsic part of professional development and corporate responsibility at Orbia. Being a good citizen individually and as a business not only forges tangible connections to the wider world, but also enables satisfying employee engagement. Volunteering shows a real commitment to others in need, boosts performance on the job, and an overall sense of fulfillment.

In 2021 we achieved:

8,380

Volunteer hours

103,206

Beneficiaries

2,780

Number of volunteers



Emergency Relief

Companies for Vaccination In Colombia, Vestolit and Alphagary joined the National Association of Industrialists initiative “Companies for Vaccination”, which seeks to protect their employees and communities by facilitating a complete vaccination program. Alongside both the TRASO and REI foundations, 746 people from the Pasacaballos community were fully vaccinated against COVID-19, including those with disabilities whose caregivers had not had access to the vaccine.

Landslide relief efforts in Mexico

Vestolit worked with United Way Mexico to support the Lazaro Cardenas community, home to a Vestolit plant, after the September 2021 landslide of the Chiquihuite hill, northern Mexico City. More than 200 families were evacuated and moved to shelters. Over the course of a month, Vestolit worked to deliver basic food baskets for the 225 families located in shelters to ensure consistent access to meals.

Laptop lending program in Mexico

Our tablet and laptop lending program project addressed the difficulties that employees and their children faced during school closures due to COVID-19 in Jalisco, Mexico. This project focused on benefitting Netafim’s workers who cannot afford to provide their children with the right at-home learning conditions during this period.

Japan earthquake relief efforts

In March of 2021, as part of ongoing recovery efforts in Japan after the 2011 tsunami, Netafim donated a NetBeat controlled drip irrigation system for an educational farm for the children of Watari city, which suffered widespread devastation. This drip irrigation system was applied to rice farming, which covers 50% of Japan’s arable land, in order to replace flood irrigation with sustainable and innovative agricultural practices. The rice farms were a success, and in October 2021, a harvesting ceremony was held, honored by the Watari city mayor.



Environment: protecting our planet

Orbia aspires to be a global leader in sustainable development, not just from the products and services that we provide the world, but also from how we conduct our business.

We continually seek opportunities to scale and learn from our efforts that result in positive environmental impacts and work to minimize or eliminate negative impacts.





Sustainable Design Principles

We consider and prioritize prevention, reduction, and mitigation of impacts throughout product life cycle (extraction, manufacturing, storage and distribution, usage performance and final disposal, reuse or recycling). Collaborating internally with operations, R&D, and sales departments, we provide accurate and transparent information to our customers about the environmental performance of our products. Business groups advance their specific Life Cycle Assessment (LCA) Programs based on both market and customer demand as well as our commitment to minimize our product’s environmental impact. As part of our life cycle stage analysis, we created a Scope 3 greenhouse gas (GHG) emissions inventory to identify the biggest reduction impact opportunities. More information about our Scope 3-related activities can be found in the Climate section below.

Environmental Management

Orbia adheres to a global sustainability policy, supported by our Environmental Management Systems (EMS) which complies with applicable environmental laws and regulations. We pursue external quality and environmental certifications to support continuous improvement across our global operations.

In 2021,

61%

(73 of 119 eligible sites)

of sites were certified to ISO14001 or equivalent external standards, and we have committed to achieving 100% certified sites by 2025.



Environmental Audits

The audit process allows us to identify both opportunities to improve and potential risks to avoid. All our certified sites are subject to third party audits. In 2021, Orbia’s corporate internal audit team included the review of environmental performance and reporting in their yearly audit plan. This program covers sites that are not yet certified in our EMS certification program or covered by our third-party assurance scope. In 2021, the internal audit team audited 11 sites across our business groups.



Environmental Compliance

In 2021, we continued work with Enhesa, an organization that supports end-to-end health, safety and environmental (HSE) compliance for global companies. These efforts enabled us to develop a system to provide updated and standardized regulatory information to all of Orbia's manufacturing facilities. Standardizing our HSE compliance processes in our manufacturing facilities paves the way for enhanced compliance monitoring and strengthens our capabilities to fulfill HSE requirements across all of our manufacturing locations.

Following self-assessments by all sites, 70% of all applicable regulatory requirements had been reviewed for compliance at the end of 2021. Regulatory compliance monitoring will continue on an ongoing basis, thus mitigating possible regulatory risks. We will continue to use available tools and capabilities to strengthen our compliance process across all jurisdictions.

Overall, in 2021, we achieved significant improvements in environmental performance.

(as shown in the table at right)

Environmental performance in 2021 (vs. 2020)



Impact area	Goal	Target year	Baseline	Performance in 2021
Climate Change	Achieve net zero carbon emissions (Scope 1 & 2)	2050	2.00 million tons CO ₂ e	1.81 million tons CO ₂ e ✓
	Reduce Scope 1 and 2 GHG emissions by 47%	2030	2.00 million tons CO ₂ e	1.81 million tons CO ₂ e (-10%) ✓
	Reduce Scope 3 GHG emissions by 30%*	2030	90 million tons CO ₂ e	82 million tons CO ₂ e (-8%) ✓
Air Emissions	Reduce sulfur oxides (SO _x) emissions by 60%	2025	1,355 tons	1,075 tons (-12% vs. 2018 baseline) ✓
Environmental Management	100% of sites certified with an environmental management system	2025	55% (70 plants)	61% (73 plants)
Waste	100% of plants will send zero waste to landfill**	2025	24% plants	39% plants ✓

(✓) Figures with this symbol are third party assured.

*Goal covers categories 11 (use phase) and 12 (end of life), which represent more than 90% of our Scope 3 footprint

**Orbia adopts a definition of Zero Waste to Landfill that is 90% diversion of production-related waste sent to landfill or incinerated without energy recovery

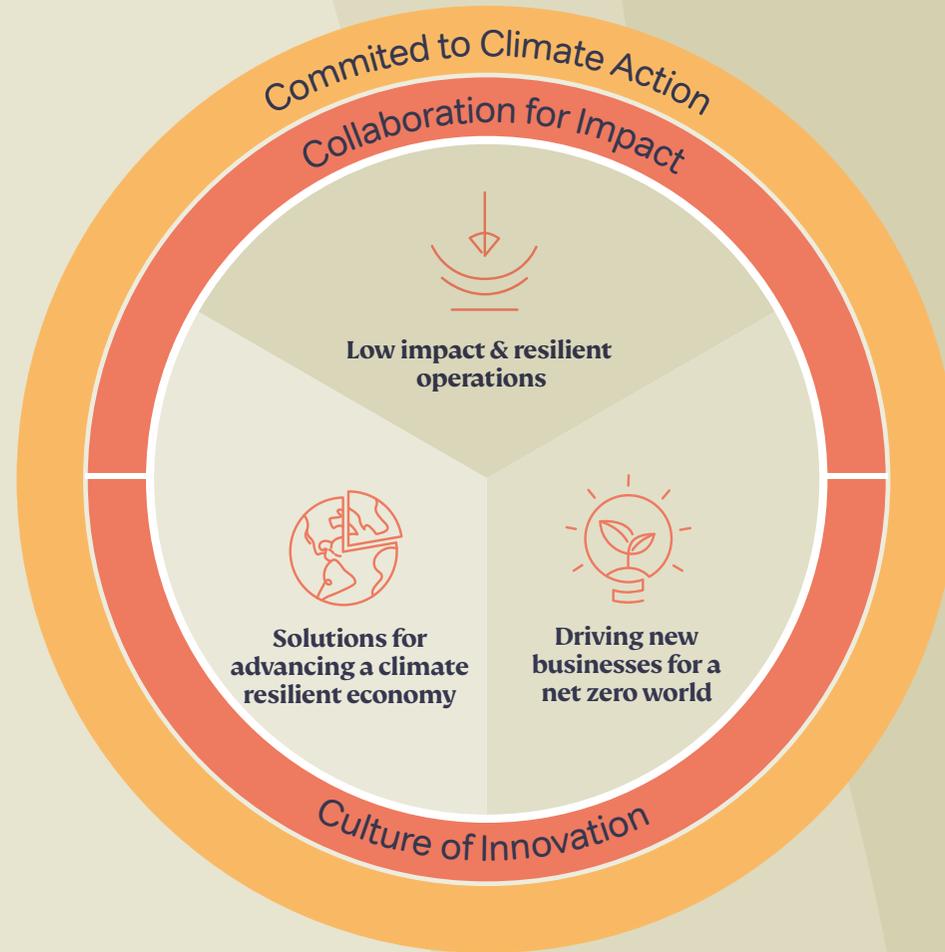


Orbia's Climate Action Framework

Climate change is one of the greatest challenges the global community will ever face and presents both risks and opportunities to our business.

It is clear to us that we will achieve our shared purpose, to advance life around the world, by mitigating these risks while making our operations climate-resilient and seizing new business opportunities that can lead society to a sustainable future. Since 2009, when we first disclosed our carbon footprint, we have considered climate change as a relevant topic for the sustainability of our business. Like many companies globally, we increased and accelerated our focus and actions on this topic as the challenge has become more acute. We have defined our Climate Action pillars based on our understanding of our physical and transitional climate change risks and opportunities.

Our Climate Action pillars drive practical actions embedded in our innovation, manufacturing, distribution and life-cycle approach. This includes finding a deeper understanding behind the alleviation of water stress, advancing circularity, and eliminating the amount of waste to landfill.





Our **2021 Climate Report**, prepared in line with the **Task Force on Climate-related Financial Disclosures (TCFD)** recommendations, includes additional details on how we identify and manage climate risks and opportunities in line with our climate action framework.



Low impact & resilient operations

We are continuously identifying ways to decarbonize through optimizing manufacturing processes, transitioning to low-carbon and renewable energy sources, and exploring opportunities in carbon capture and hydrogen. In parallel, our sites are adapting to physical climate change risks, including risks associated with changing weather and their resulting disruptions.



Solutions for advancing a climate resilient economy

Orbia's business groups are constantly developing products and services with improved environmental performance that support our customers and suppliers in making measurable progress against their own climate goals. Our solutions contribute to urban and rural resilience and support the transition to a low carbon and circular economy. These include materials and products that advance alternative energy, resource efficiency, green buildings, data connectivity and health.

Further details are available in our [Orbia Sustainable Solutions Report](#).



Driving new businesses for a net zero world

Both within existing businesses and through corporate venture capital, our culture encourages exploring new technologies and strategic acquisition opportunities, investing human and financial capital to support new business models that will have a positive impact in the longer term. Climate Tech is a focus area of strategic investments made through [Orbia Ventures](#), our corporate venture capital fund.



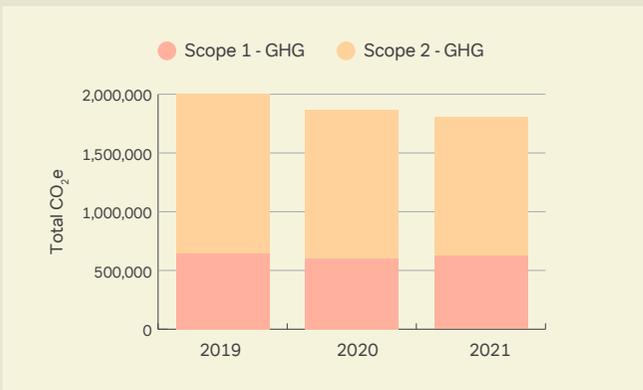
Greenhouse Gas Emissions

To develop our climate change strategy, we measure our Scope 1, 2 and 3 emissions.

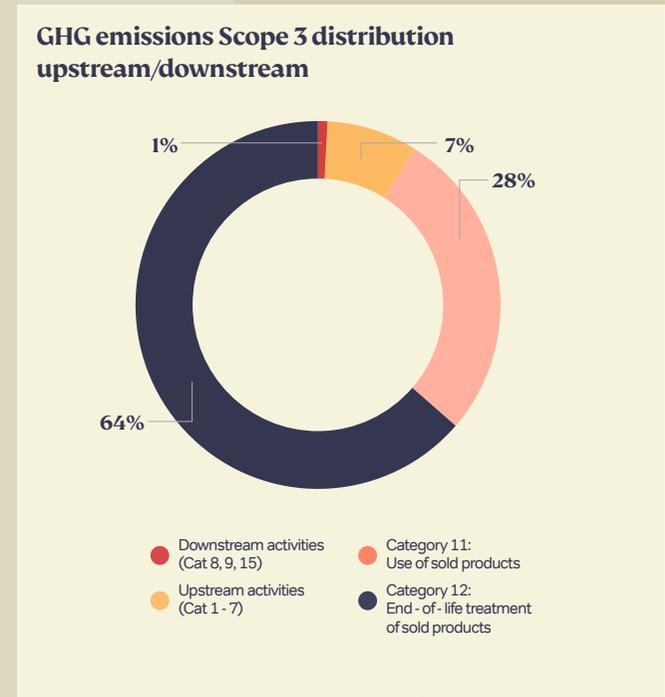
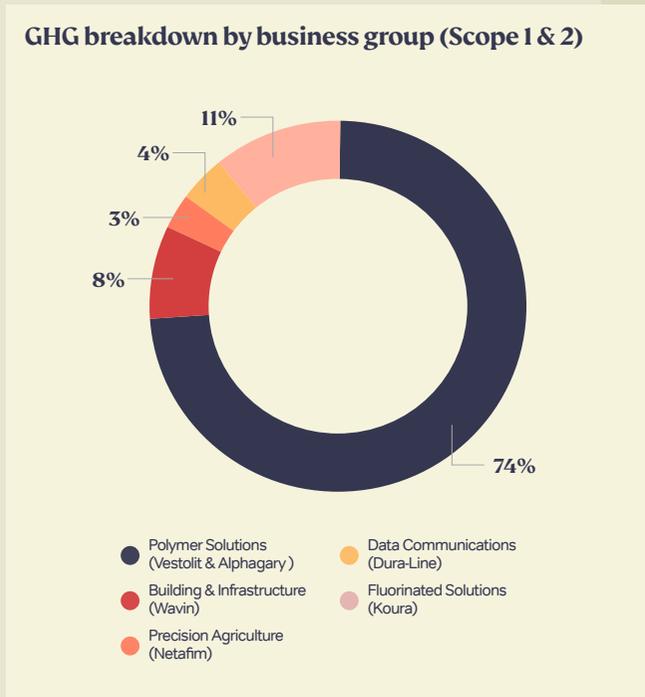
We develop our GHG inventory based on globally accepted standards and protocols including The Greenhouse Gas Protocol. In addition, our GHG reporting is assured by a leading third party every year (assurance statement is available in our [2021 ESG Databook](#)).

with less relevance are estimated. As part of our continued progress on this front, we expect to refine and improve our data capture processes and calculations as we move forward. In the meantime, our assessment shows that the most significant Scope 3 categories are 12 (End-of-life Treatment of Sold Products), followed by 11 (Use of Sold Products), and 1 (Purchased Goods and Services). This provides a strong rationale for focusing our work in these areas to reduce Scope 3 emissions through our value chain. We expect to report on our progress in coming years.

We continue to be in line with our commitment to mitigating climate change through our low impact and resilient operations and hope to achieve approval for our Science Based Targets aligned with a 1.5° C scenario. We plan to drive decarbonization throughout our business at a steady pace with an ambition to achieve net zero carbon emissions by 2050. Our plan includes reducing Scope 1 and 2 GHG emissions by 47% by 2030 and reducing Scope 3 emissions by 30% by 2030¹.



Our 2016-2021 emissions data is located in the GRI Index and Data Tables on [page 97](#). In 2021, we updated our Scope 3 GHG emissions inventory process and calculated that our Scope 3 emissions are around 82 million tons CO₂e, covering all relevant categories of the Technical Guidance for Calculating Scope 3 Emissions: Corporate Value Chain Accounting (Scope 3) and Reporting Standard. After eliminating the categories that are not applicable or cost-effective to measure, we completed a comprehensive analysis for the most relevant Scope 3 categories; categories



1. Goal covers categories 11 (use phase) and 12 (end of life), which represent more than 90% of our Scope 3 footprint.





A robust carbon inventory has enabled Orbia’s business groups to plan and implement decarbonization efforts on three main fronts:

- Optimizing processes to drive efficiencies
- Transitioning to renewables and lower carbon energy sources
- Exploring carbon capture and hydrogen investment opportunities

To accelerate progress towards our goals, Orbia has established a Decarbonization working group to identify value-adding partnerships between business groups and functions for implementation of high impact GHG reduction projects. The group has been making progress in the following areas:

- Mapping high impact cross-business initiatives
- Establishing methodologies and assessment criteria for prioritizing carbon reduction projects
- Ensuring priority projects/initiatives are incorporated into relevant sites and business goals and or/CapEx plans as appropriate
- Communicating benefits and why priority projects/initiatives are selected

Greenhouse Gas Emissions Reduction Projects

As shown by our energy use and emissions performance, we continued to deliver on our commitment to improve our climate impacts during 2021. We have reduced 3% of our emissions compared to last year. This was achieved in part by the following highlighted projects.



Optimizing processes to drive efficiencies

We estimate to have reduced more than 3,000 tons of CO₂ through implementing enhanced manufacturing technology and energy efficient processes that range from improved co-generation on site to optimized heat recovery and steam consumption.

As an example, Alphagary’s Altamira I plasticizers plant installed and commissioned an alcohol stripping column, resulting in 83% time reduction, obtaining low alcohol concentrations in plasticizers in less than 40 minutes and a reduction of steam consumption of 20% compared with the previous process. As a result, Alphagary will stop consuming 5,500 ton/year of steam, which translates to 1,000 tons CO₂e/year.

In alignment with optimizing our processes, we added new condensers to each reactor at our Altamira site. These additions supported more efficient heat removal during the exothermic reaction for manufacturing PVC. This saved approximately \$1.5 million USD in electricity costs, and reduced about 50 KWh per ton produced, and 8,000 tons of CO₂e during 2021.

Additionally, Dura-Line joined the U.S. Department of Energy’s Better Plants Program to improve energy productivity by 25% over a ten-year period. The first assessments conducted in 2021 revealed the opportunity to reduce nearly 1 million KWh through plant improvements. Our team looks forward to implementing these robust energy improvements and system optimizations in 2022.



Transitioning to renewables and lower carbon energy sources

We increased our use of renewable energy by 28%, reducing around 15,000 tons of GHG emissions primarily in our European plants, and bringing our total purchased and generated renewable electricity to 6% of total electricity consumption. Six additional Orbia sites incorporated partial or total renewable electricity in 2021. These new plants acquired renewable electricity through either Power Purchase Agreements (PPAs), renewable energy certificates (RECs), or Guarantee of Origin (GOs) acquisition.

In 2021 **23%** of Orbia plants are now using renewables.

Some examples of this continual effort include:

- Our Alphagary's Melton Mowbray site is closing an agreement with a UK utility facility that supplies renewable electricity, reducing 3,000 tons of CO₂ emissions
- Solar panels are being installed in Dura-Line's Goa facility in India, which will generate approximately 1 million KWh annually, driving GHG emissions reductions by 1,250 tons annually

- Our Vestolit location in Pedricktown will source 100% of its electricity from a solar array starting in 2022

Vestolit will also initiate decommissioning of its coal-fired boiler, and transition to two gas-fired boilers at the Henry plant. By eliminating the use of coal, the Henry site will reduce GHG emissions by around 64,000 tons when fully completed. In addition to these projects, Wavin's Europe operations have set a target for sourcing 100% of their electricity from renewable sources by 2025, enabling a 4% reduction of Orbia's total GHG emissions.

Besides transitioning to renewables, a significant milestone towards reducing our footprint is also demonstrated by our business groups engaging with electricity suppliers that offer cleaner energy sources, even if their matrix is not 100% renewable yet. Through these activities, we have been able to achieve a net reduction of around 90,000 tons of CO₂ from sites with significant energy consumption as well as drive demand that will aid power companies in their energy transition.



Exploring carbon capture and hydrogen investment opportunities

Orbia has been proud to announce our first investment in the green hydrogen space. [Verdagy](#) is innovating water electrolysis technology for large-scale production of green hydrogen. Orbia Ventures also invested in [Osmoses](#), a startup developing advanced molecular filters for chemical separations, which can be applied to carbon capture and blue hydrogen production in a cost-effective manner.

Other Air Emissions: SOx

We are investing in technology to control SOx emissions while meeting global demand for our products.

Actions include catalyst replacement and technological upgrades at key sites that enable us to meet our 2025 goal.





Circularity

Our 2025 commitment of sending Zero Waste to Landfill (ZWTL²) is an ambitious goal, but it is only one element of a more holistic approach to reducing the lifecycle impacts of our products.

Our plans address reducing waste at the source through design for sustainability principles, inclusion of recycled content in our products, recyclability of components, recycling programs and end-of-life take-back programs. By addressing all these dimensions of our product lifecycle, we advance a circular economy and improve the environmental impacts of our products overall. In 2021, we progressed several initiatives.



Diverting waste from landfill

All our sites are on a mission to reduce waste at source and divert waste from landfills. Overall, waste generated on a per ton basis has been consistently decreasing, and our absolute volume of process-related waste to landfill or incinerated without energy recovery was 19% lower in 2021 than in 2020. We continue to focus on solutions for waste diversion at all our sites.

Our cross-functional global ZWTL Working Group has helped drive consistent progress towards this goal through standardization of methodologies, conducting a detailed waste mapping exercise, aligning taxonomy across our business groups and sharing knowledge and good practices. Several sites improved their waste performance by switching waste management providers to those who offer reuse, recycling and composting alternatives or by optimizing other waste handling processes.

We have focused our efforts on two of our Vestolit sites sending water treatment sludge to landfill: Cartagena and Altamira II. In 2021, 100% of the sludge generated in Cartagena was recovered, amounting to roughly 30% of its waste to landfill, while at the same time saving 60% of

the disposal costs. In Altamira II, we invested in improving the water treatment processes, resulting in a reduction of around 18% of sludge and the diversion of 400 tons of sludge from landfill. Best practices are to be implemented in our Altamira I site during 2022, with estimated savings around \$12,000 USD per year.

In addition to sludge diversion, Cartagena signed a waste management contract with Veolia that enabled around 250 additional tons to be diverted from landfill. Together with the efforts to divert sludge from landfill, this represents a 37% reduction of waste sent to landfill for this site.

In 2021, Orbia plants diverted

5,000 tons

of process waste from landfill

2. Orbia adopts a definition of Zero Waste to Landfill which is 90% diversion of process-related waste sent to landfill or incinerated without energy recovery.



Driving use of recycled content

We consider environmental criteria when selecting raw materials. For example, Wavin, Dura-Line and Netafim continue to target increased use of recycled raw materials in manufacturing of driplines, pipes and conduits.

Increasing recycled content

Wavin's target to increase recycled content in construction pipes and materials	25% in 2025
Netafim's target to increase recycled content in driplines for irrigation	45% in 2030

Both Wavin and Netafim are committed to increasing the consumption of post-consumer recycled plastics in their products and have adopted Sustainable Design Principles to underline the importance of sustainability during the design of new products. Wavin is continuously examining opportunities to integrate post-consumer recycled material in its existing product portfolio, without compromising quality and product performance. Other initiatives include scaling up the take back services for recycled material in Europe and investigating possibilities of similar services across other regions. Netafim increased the use of recycled content from 7.5% in 2020 to 10.8% in 2021.

New Aquacell: made from

100% recycled plastic

In 2021, three of Wavin's virgin PP geo-cellular units were replaced with fully recycled PP next generation [AquaCell](#). The new generation units have a stackable design, which means up to 4 times more products in every truck, less space required on-site and fewer deliveries, reducing CO₂ emissions from transport by 70% for full truckloads.





Actions beyond our operations



Recovery of PVC IV bags

Vestolit and Alphagary have collaborated with Baxter to collect and recycle IV bags in Colombia as part of their PVC in Motion recycling program. In 2022, we plan to replicate the program in Mexico and close the loop through manufacturing compounds with recycled PVC in Alphagary's operations to offer products with an additional sustainability value.



Take-back programs

Dura-Line's take -back program in 2021 allowed the repurposing of 1,754 reels and diverted a quarter million pounds of scrap tape to be recycled resulting in savings of \$80,000 USD. In addition to Dura-Line's program, Netafim operates a take back program that expanded from four to eight countries in 2021, resulting in 13,000 tons of end-of-life driplines collected.



Pellets waste reduction

Our participation in the Operation Clean Sweep program has expanded from the U.S. to Mexico and Colombia in 2021. Vestolit's PVC resins plants in Mexico and Colombia joined the program to identify effective processes for limiting the loss of resins and pellet byproducts in plastics operations. Efforts will be executed in partnership with local national industries: ANIQ in Mexico and Acoplasticos in Colombia.



Refrigerant recovery

Koura's refrigerant recovery plant in Japan increased its processing capacity in 2021. The Mihara plant continues to implement this successful recovery technology and practices to further reduce global warming impacts. During 2021, approximately 900 tons of refrigerants were recovered, avoiding around 1.7 million tons of GHG emissions. The site has plans to further grow its recovery capacity in 2022.



From byproduct to roads

Koura's Matamoros chemical site in northeastern Mexico, has found a beneficial use for its calcium sulfate byproduct. It is being donated to local authorities and other key stakeholders to be used as an effective road base and subbase stabilizer. Over 176,500 m³ of calcium sulfate were donated for this purpose in 2021.



Water

We recognize the critical need to be responsible stewards of water, particularly in areas under high water stress.

Our manufacturing plants operate within water efficiency principles, and our extrusion plants (Wavin, Dura-Line and Netafim) maintain closed loop systems that minimize water withdrawal. In 2021, we improved our water performance both on an absolute and a per ton basis. Also, Orbia responded to the CDP Water Security questionnaire for the first time in 2021 and obtained a B score.

Water intensity reductions over time (m³/ton)



In addition, we monitor water use in areas of water stress. Based on our updated 2021 assessment using the World Resources Institute (WRI) Aqueduct Version 3.0 tool, 41 of our plants are in areas of high or extremely high water stress, representing 34% of our sites and 47% of our total water withdrawal.

Brand	Sites in water stress areas (by Business Group)	% Sites in water stressed areas at business group level
Vestolit & Alphagary	9	41%
Wavin	11	21%
Netafim	13	72%
Dura-Line	3	17%
Koura	5	63%
Orbia	41	34%





In 2021, we continued our water risk assessment program, covering the full spectrum of watershed risks (physical, regulatory and community-related).

Vestolit completed assessments for all resin plants in Mexico and Colombia (representing 42% of Orbia’s consumption located in water-stressed areas). Based on these assessments, context-based water targets for each of these sites are being analyzed; risk mitigation plans are being developed, alternative water sources evaluated, and water risks embedded in overall risk processes. Some of the actions developed in 2021 include shifting to suppliers that do not operate in areas of high-water stress, and advancing on wastewater circularity and reuse programs.



Wastewater circularity

Over the last two years, we have significantly improved efforts to mitigate our impact on water-stressed areas. Our El Salto Plant near Guadalajara, in Mexico is located in an area of extreme water stress. A project partnership with the municipal water treatment plant initiated in 2020 is on track to be completed, allowing us to source treated water and return it for treatment after use in our production process. By sourcing water from a municipal treatment water plant, the plant will no longer rely on underground water in high-stress zones, further progressing our water efficiency initiatives.



Wastewater reuse

Previously unable to reuse the water from our Vestolit site in Cartagena, Colombia, an area of medium- to high-water stress, our team saw an opportunity to partner with neighboring companies to reuse wastewater, and the project has successfully advanced to the legal stage. The water quality has been characterized and assessed based on the neighbor’s requirements for water uptake. The team identified process reconditioning activities and the engineering phase will start in 2022. The success of this project will benefit local factories, residents and alleviate water stress levels.



Water reuse rates at Koura’s mining sites

Koura’s efforts to reduce water consumption have proven successful through the implementation of a number of technologies designed to increase water recovery and reduce consumption of fresh water. The installation of process water reclamation systems has resulted in recovery of 84% of process water at the Las Cuevas mining site in Mexico. We plan to replicate this effort at the Rioverde beneficiation plant, which is seeing significant growth in its operations. Overall, these initiatives have resulted in a 34% year-on-year water consumption reduction at these two sites.



Actions beyond our operations

Supporting Water Funds and Water Security

Since 2012, Orbia has supported the [Latin American Water Funds Partnership](#), providing financing, products and technical knowledge to the development of five Water Funds that are located in areas near its operations: Ecuador, Peru, Colombia, Brazil and Mexico. This year, Wavin donated \$22,000 USD to support Water Funds in Brazil, Peru and Colombia.

Agua Capital

In 2021, Orbia’s chairman Juan Pablo del Valle, presided over Agua Capital, an organization that promotes water security in Mexico City. In alliance with NGOs, academia, and various public and private partners, Agua Capital successfully implemented the following projects:

- Installation of rainwater harvesting equipment in schools and houses, accounting for more than 8,000 m³ of rainwater collection.
- Conservation efforts on Mexico City’s external water sources (sub-basin of the State of Mexico).
- Development of a massive online open course with UNESCO’s Water Security Center and the National Autonomous University on Hydro-intelligent Cities, aimed to share knowledge and best practices on water management in urban areas.
- Development of the publication “Mexico Valley’s Water Challenges: All You Need to Know,” which will be shared among public policy forums.
- Appointed to chair the Water Resilience Technical Committee of the government of Mexico City.

Orbia businesses also operate WASH (Water Access Sanitation and Hygiene) programs in communities. For further reference, read our [WASH highlight section](#).

Biodiversity

At our fluorspar mining operation in San Luis Potosi, Mexico, we continue efforts to protect biodiversity, including restoration of the natural habitats, relocation of species, reforestation and compensation for adverse effects based on the findings of environmental impact studies.

In 2021, we renewed our collaboration with the National Forestry Commission of Mexico (CONAFOR) regarding the joint funding for an environmental services payments program, for the conservation of the Natural Protected Area “Sierra de Alvarez”. Rural common landowners (Ejidatarios) from Santa Catarina will continue to be the main beneficiaries of this private-public association, within this renewed 5-year agreement (2021-2026). For this new term, the Santa Catarina Ejido landowners are able to allocate 50% of the funding in social actions that impact directly at their community. As in the previous period, the environmental services payments include support for a broad range of initiatives, including firewall protection, provision of cameras for monitoring animal species, equipment for radio communication and forest firefighting as well as road maintenance.



Foundations of responsible business

Everything we do at Orbia is grounded in a strong foundation of ethical conduct as well as responsible, accountable and transparent business practices.





We recognize that trust in Orbia is dependent upon our behavior and respect for the rights of all the people we engage with and for the natural environment. We work to make values a foundational part of our culture, and we know this creates more value for all our stakeholders.

As a signatory to the UN Global Compact, and as a firm supporter of the UN SDGs, we strive to live up to the highest ethical standards every day. This section covers our responsible business practices in the following areas:



Governance & Risk Management



Ethics & Compliance



Cybersecurity



Supply Chain

Corporate Governance

Our Board of Directors (at end December 2021) consists of 12 directors, eight (67%) of whom are independent, exceeding the minimum number of independent members (25%) required by Mexican Securities Market Law and our by laws. Three Board members are women (25%). Mr. Juan Pablo del Valle has presided as Non-Executive Chairman since 2011.

Three Committees assist the Board of Directors in carrying out its duties, and are mostly composed of independent Board members, as required by Mexican Securities Market Law.

- **Audit Committee:** Assists the Board in appointing and overseeing the performance of the Company's independent auditors and ensuring the integrity of the Company's financial statements; evaluating and overseeing the performance of the Company's internal controls and internal audit function, among other related duties. This Committee also monitors the Company's major risk exposures.
- **Corporate Practices & Sustainability Committee:** Advises and assists the Board of Directors in overseeing corporate governance matters and executive compensation, as well as supervising Sustainability, Health, Safety & Environment, strategies and practices.
- **Finance Committee:** Supports the Board of Directors in monitoring and overseeing the Company's capital structure, capital allocation strategy, financial policies and management of financial risks, cash flow plans, dividend policy, the incurrence of debt and investment strategy (including material mergers, acquisitions and divestitures).

For further information:



[Corporate Governance](#)



Executive compensation: rewarding long-term value creation and benchmarked with best practices

In 2021, Orbia conducted a comprehensive review of its executive compensation structure with the assistance of a nationally known US compensation consultant. The resulting modifications to executive compensation include a redesigned short-term incentive plan that promotes a pay-for-performance culture, where employees share and take active roles in supporting Orbia’s vision for success as a purpose-driven, future-fit organization; and a long-term incentive (LTI) plan to attract, incentivize, and retain qualified talent critical to the long-term success of the company. LTI awards are now issued in the form of Restricted Stock Units and Performance Share Units payable in actual shares of Orbia common stock as opposed to “phantom stock” awards, helping to promote an “ownership” mindset for our leaders and more closely align their interests with those of our shareholders.

We have created incentives for our managers to support the achievement of our sustainability objectives by linking performance on specific ESG-based metrics and executive compensation.

As part of our Short-Term Incentive plan, an ESG (environment, social and governance) performance modifier funds up to +/- 10% of the annual bonus of senior management, based upon achievement of defined ESG metrics across four areas:



Innovation



Health & Safety



Environment



Diversity & Upskilling

Annual goals for metrics in the above areas are reviewed and approved by the Board of Directors every year, and they reflect our intention to tie compensation to the achievement of ESG goals.



In an environment in which investors, customers, regulators and other stakeholders expect companies to adhere to ever-higher standards of corporate governance, ethics and compliance, our Board is focused on systematically clarifying and strengthening Orbia’s governance framework, incentivizing our employees to operate according to the highest standards of business conduct and ensuring that we are adhering to the environmental, social and governance standards we have committed to.”



Sheldon Hirt

Orbia Senior Vice President and General Counsel

For further information:



[Executive compensation structure](#)



Risk Management

An executive Critical Risk Committee (CRC), chaired by our CEO and comprised of our CFO, Presidents from each of our business groups and other key functional heads, assists the Board of Directors in identifying and assessing enterprise risks, evaluating our risk profile, developing risk mitigation plans and overseeing their implementation.

The CRC meets quarterly and reports directly to the Audit Committee and to the Board of Directors. The CRC oversees four primary risks to the Company: Strategic/Business, Financial, Operational, and Reputational. Since 2020, climate and cyber risks are integrated into these Orbia multi-disciplinary company-wide risk management processes



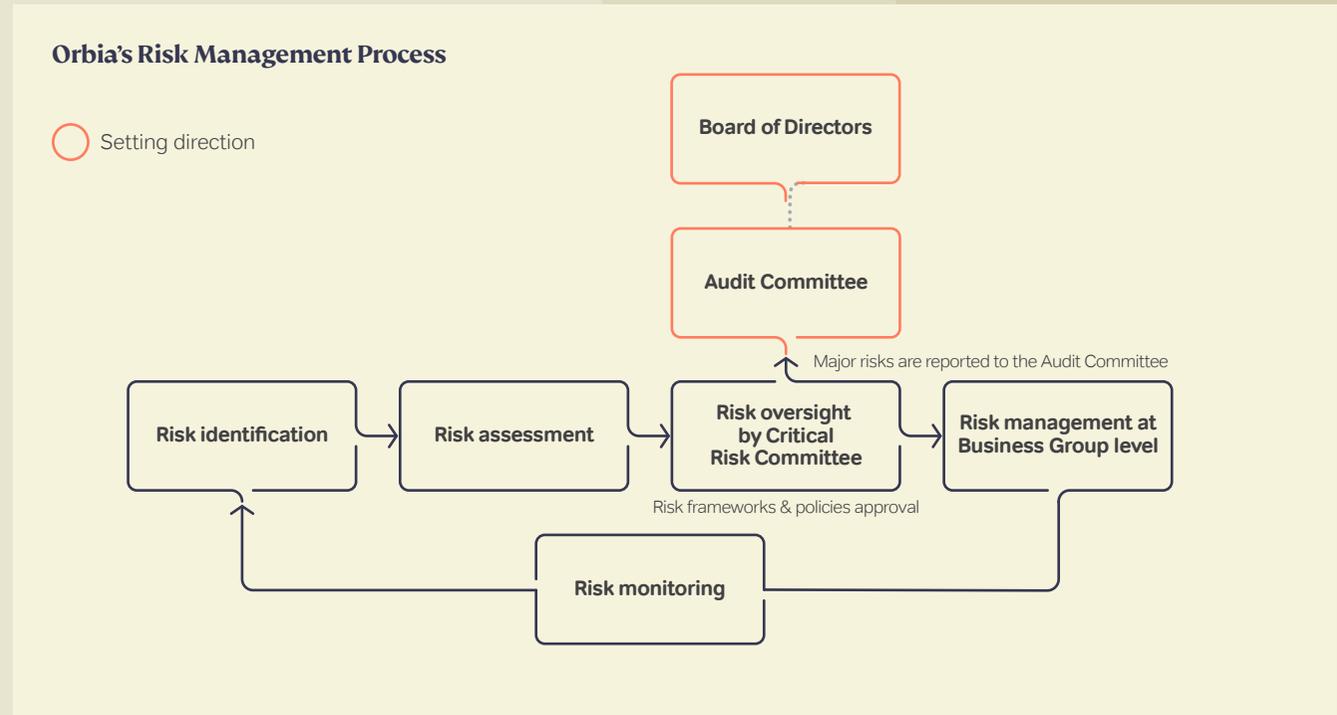
The CRC is instrumental for embedding a risk culture across Orbia and allows the Board to have a deeper oversight of risks and their management.”



Jim Kelly
Orbia Chief Financial Officer

Our risk management process is an ongoing, systematic approach, active across Orbia’s corporate functional areas and business groups. The focus is on both strategic and operational issues, and changes in risks and opportunities status are promptly communicated to decision makers. Our risk profile, including short, medium, and long-term risks, is reviewed every few years.

Orbia’s Risk Register, approved by the CRC, and the results of Company-wide enterprise risk identification and assessment processes provide the CRC with a three-to-five-year roadmap to implement prioritized risk management protocols across the business groups. Risk Registers are managed at the business group level, accompanied by an actionable mitigation strategy defined for each risk.





Ethics & Compliance

At Orbia, we believe that ethical conduct, in full compliance with applicable law, is fundamental to our long-term success.

This means more than rules and guidelines. We aim to instill a culture of personal accountability, so that all members of our global workforce understand what is expected and are motivated to do what is right. Orbia's [Code of Ethics](#) is the foundation document and sets forth the principles, standards, policies and procedures that guide our workforce's daily actions in ways that continue to reinforce trust in our Company and purpose.

Orbia's Code of Ethics is a binding requirement for all Directors, executives, employees, contractors, temporary workers and business partners that do work on our behalf.

2021 program developments

Despite challenging circumstances caused by the global pandemic, we achieved several key milestones, while maintaining our ongoing compliance processes.

- **Enhanced Code of Ethics:** In May 2021, as part of Orbia's annual Ethics Month, we released an expanded and improved Code of Ethics to all employees. Updated sections include manager responsibilities, preventing bribery and corruption, complying with anti-competition, data privacy, government contracting, money laundering, trade and export controls laws, and protecting confidential and propriety information. The Code was translated for the countries where we have operations. All employees received Code of Ethics training, including information about these important changes.
- **Managers' role in fostering a culture of ethics:** Managers at Orbia set the tone for ethical behavior, and in 2021, all people managers worldwide underwent an interactive two-hour live training course on the updated Code of Ethics, how to foster a Speak Up culture, and responsibility to prevent retaliation.
- **Data privacy initiatives:** Since the arrival of Orbia's new Chief Information Security Officer, Orbia is pursuing a cross-functional approach to cyber and data privacy protection. We established a Data Privacy Steering Committee co-chaired by Orbia's CISO and CCO and published a new Acceptable Use Policy in over 12 languages as well as a refreshed Data Privacy Policy. We plan to keep investing in our Data Privacy program in 2022.
- **Ethics survey:** In 2021, we repeated our voluntary Ethics & Culture Survey, making it available to operations

workers, in addition to all office workers. We received strong employee engagement. The 2021 survey results demonstrated that employees continue to have a positive perception of senior leadership that is above the survey's benchmark. Scores showed improvement in the areas of comfort in speaking up and openness of communication. The survey demonstrated that our Ethics & Compliance awareness campaigns are bearing fruit: Orbia is now at or above benchmark for awareness of the Code of Ethics, how to report misconduct, and the availability of an anonymous mechanism to ask questions and raise concerns.

- **Ethics month:** Orbia hosted its second annual month-long Code of Ethics awareness campaign. Leaders across Orbia actively participated by holding virtual town halls and delivering employee communications to reinforce Orbia's core values and the importance of acting with integrity. Employee engagement was high, with almost all employees taking their annual Code of Ethics training by the deadline.
- **Third party compliance:** Orbia is committed to ensuring that its supply chain complies with international laws, including human rights and modern slavery laws. With its revised Code of Ethics, Orbia made clear its expectation that its suppliers will comply with the policies in the Code of Ethics. In several of its business groups, Orbia also implemented the EcoVadis tool (see [Supply Chain](#)), providing third-party certification of a supplier's compliance program and human rights policies. Third party compliance will continue to be a priority in 2022.





Antitrust compliance

Orbia takes its obligations to compete fairly and lawfully in the global marketplace seriously, and has zero tolerance for activities that breach antitrust laws. Over the last several years, we have invested in our antitrust program by providing meaningful tailored training for all commercial teams. In addition, all office staff received online antitrust training and we upgraded the antitrust section of the Code of Ethics. This area will remain a focus in 2022.

Ethics & Compliance training

In 2021, all permanent employees received Code of Ethics training tailored by job function. All managers, professional and administrative employees, representing approximately 55% of our total workforce, completed a mandatory annual online Code of Ethics training. The hour-long course covered important Code of Ethics topics such as ethical decision-making, protecting human rights, anti-corruption, accurate books and records, conflicts of interest, data privacy, insider trading, protecting confidential information and IP, appropriate use of social media, the importance of a Speak Up culture and Orbia's Non-Retaliation Policy. The remaining 45% of Orbia's employees, primarily manufacturing employees without computers, completed a course, tailored for plant and operations teams, which included Speak Up and safety information.

Throughout the year, Orbia delivered tailored live leadership training. Senior leaders in all business groups attended an hour-long course on ethical leadership; all people managers received a two-hour prevention of retaliation course; commercial teams received either

antitrust or anti-corruption training based on geography in late 2021 and early 2022; and all lawyers received trade and export controls training to help ensure compliance with international trade regulations.

In 2022, Orbia will continue to ensure that all its employees receive meaningful and tailored Code of Ethics training that is relevant to their job function.

Ethics Helpline

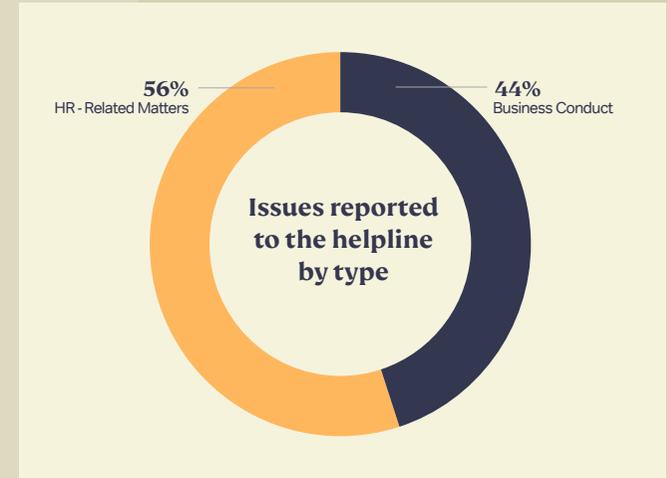
During Ethics Month and periodically throughout the year, we provide information and examples of anonymized real situations that emerged through use of the [Ethics Helpline](#), to reassure employees that it is safe and worthwhile to speak up. For example, more than 3,090 employees attended our Ethics & Compliance webcasts during 2021, allowing us to share real, anonymized cases.

Ethics Helpline reports in 2021

Orbia regularly provides clear messaging to employees about the availability of its Ethics Helpline as an anonymous resource to raise a concern or ask questions.

In 2021, we received 250 reports via the Ethics Helpline or directly to a company representative.

Orbia's anonymity rate is better than benchmark, generally signaling that employees are comfortable speaking up. Orbia investigates all allegations brought to its attention.



Audits

Orbia conducts internal process audits, to provide reasonable assurance on the effectiveness and efficiency of operations. Sites are selected based on a rating system that integrates factors such as percentage of total Orbia contribution, significant changes over the past year, time elapsed since last audit, previous performance, ethical concerns (e.g., number of Ethics Helpline reports). In addition to anti-corruption and fraud prevention controls, the Internal Audit (IA) team also conducts IT and sustainability reviews.

IA operates independently from the business groups and conducts audits, outsourcing audits that require subject-matter expertise. IA also develops analytical tools that aid in continuous monitoring and conducts audit trainee programs (eight in LATAM and four in EMEA).





Cybersecurity

At Orbia, we have positioned cybersecurity as an integral global capability. Not only is it vital to our business success, but it is expected by customers and stakeholders.

With the arrival of Orbia’s new Chief Information Security Officer, we established a 3-year cybersecurity investment roadmap focused on strengthening our foundational IT compliance processes by implementing a standard control framework globally, expanding our cyber incident response and monitoring arsenal, and by increasing the cyber resiliency of Operational Technology (OT) and critical assets (“crown jewels”).

We also established a cyber risk committee structure called “Cyber Risk Watch,” which connects cyber risk management across the business groups up to Orbia’s Critical Risk Committee level and ensures top-to-bottom accountability and transparency.

In 2021, we launched Cybersecurity Awareness Month in October to further instill a culture of responsibility for our digital safety through webcasts and trainings.

We also conducted specialized live training for our People and IT teams, and these topics will be included in our mandatory Code of Ethics training for all administrative employees in 2022.

Supply Chain

Our responsible business practices do not start or stop at the gates of our factories; they apply across our entire value chain, and specifically, through engagement of our supply network and more than 29,000 suppliers who support our business around the world through the provision of raw materials, products, equipment and services. We expect our suppliers to operate to the highest of ethical standards and acknowledge their review and acceptance of Orbia’s [Code of Ethics](#). Our business groups require written acknowledgment of their own supplier code of conduct or Orbia’s Code of Ethics for suppliers, representing more than 76% of our spend.

Our supplier program, enabled by EcoVadis, provides supplier environmental assessment, monitoring, and improvement. Working with our suppliers is one of the ways we collaborate with our key stakeholders. Our program provides benefits to Orbia and to our suppliers, including:

- Minimizing and mitigating sustainability-related risks across Orbia’s supply chain
- Enabling improvement in our supply chain impacts (e.g., through targeted supplier selection and performance management)
- Increasing transparency within all parties of our supply chain
- Leveraging the EcoVadis platform to support our suppliers’ own business development and sustainable growth

Our implementation of this program adopts a risk-aligned, phased approach, and is currently implemented within

Wavin, Dura-Line, and Koura UK, with the remaining business groups to adopt this program in 2022. As of 2021, our supplier assessment program covers 80% of our total spend across these brand operations.

Training procurement teams

In 2021, EcoVadis trained 66% of buyers of the three participating business groups and others will continue through and beyond 2022.

Supplier performance

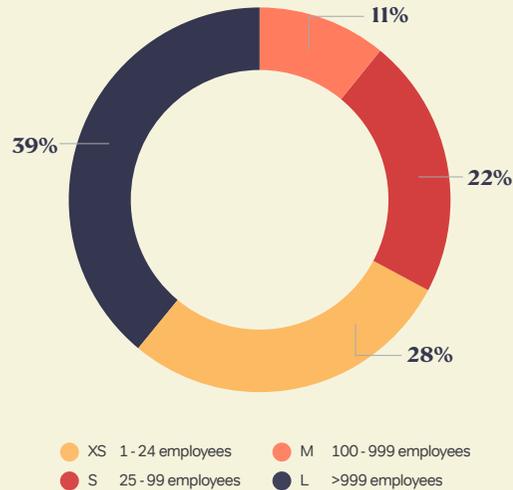
In 2021, 60% of the suppliers that took an EcoVadis assessment in 2020 have shown an improvement in their score, and 20% show a stable score.

Suppliers are held to a minimum performance score of 35-45, under which we will consider switching to a supplier with a superior sustainability performance. Companies scoring below our threshold are required to present an action plan for improvement. The average score is currently 52.2.

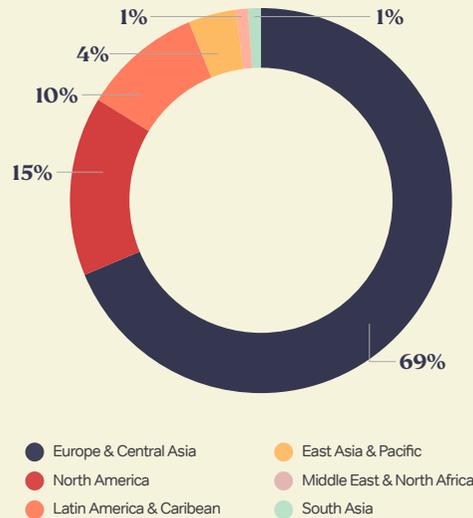
During 2022, we will continue to expand implementation of our supplier assessment program to our entire business and will review risk mitigation measures to address gaps in supplier performance based on initial assessment. Our objective is to work with suppliers in a collaborative and supportive way to deliver the best outcomes for Orbia’s business and for our suppliers.



Scored suppliers by size



Scored suppliers by region



Through our sustainable procurement programs, our vendors and partners now understand that by improving their sustainability performance and getting better ratings, they become more future-fit and that it helps their position in the market compared to their competitors. When they become more sustainable, it helps them grow their business.”

Peter Verkaaik

Director Global Procurement, Wavin

Collaboration across our value chain to drive sustainability

In 2021, Koura won the award for Best Supplier for People and Planet at the Chiesi Vendor Day in recognition of how Koura’s commitment to sustainability and low global warming potential (GWP) solutions is helping Chiesi achieve its own ambitious environmental targets.

Our continued collaboration with suppliers is a key aspect to a successful and robust sustainability focused future. In 2021, Orbia obtained an A- score in CDP’s annual Supplier Engagement Rating (SER), which evaluates corporate supply chain engagement on climate issues to promote the transition to a net-zero economy. For examples on our collaboration with suppliers, refer to our [Business Group Highlights: Bio-based PVC, and Blue Caustic Soda](#).





Business Group Spotlights

**Orbia's business groups are bound
by a shared purpose.**

Each of our five business groups performs individually and in synergy with each other to deliver our overall contribution and support sustainable development. With deep expertise in critical industries needed to advance life around the world, each makes an important and distinctive impact. This section offers an overview of key highlights of each business group.



Polymer Solutions



Sustainability Spotlight 2021

Key Activities

Vestolit and Alphagary focus on PVC general and specialty resins, and PVC and zero-halogen specialty compounds with a wide variety of applications in solutions that undergird everyday life. Orbia's Vestolit and Alphagary brands supply Orbia's downstream brands and global customers seeking applications in pipes, cables, flooring, auto parts, household appliances, clothing, packaging, health and safety and medical devices.

Key Markets

Vestolit and Alphagary are leading global vinyl players, with strong positions in the Americas and Europe.

Total Sales

\$3,532m USD

(40% of Orbia revenues)

Total Employees

3,624

(16% of Orbia headcount)

Top five material topics



Health and Safety



Energy & emissions



Quality & safety of products



Innovation



Employee development, engagement & retention

Environmental progress in 2021 versus 2020:

-4.8%

absolute Scope 1 & 2 GHG emissions

-16%

total process waste

-35%

SOx emissions

Selected Metrics	Units	2019	2020	2021
Energy intensity	MWh/ton	1.30	1.26	1.24
Renewable energy	% of total electricity consumption	2.9%	2.9%	3%
GHG intensity	Tons CO ₂ e/ton	0.33	0.31	0.28
Water intensity	m ³ /ton	2.26	2.22	2.11
Waste recycled/reused/recovered	% of total waste	39%	34%	43%
Incident rate	(TRIR) total employees and contractors	0.66	0.41	0.53



Polymer Solutions



For more details, visit [Vestolit.com](https://vestolit.com)

Product Highlights:

Bio-based* PVC

In 2021, Vestolit marked a milestone with the incorporation of bio-based* ethylene in vinyl chloride production. The feedstocks' origin* being rapeseed oil and used cooking oil. Both feedstocks integrate circularity and do not compete with food production. This form of ethylene enables a 50% reduction in the carbon footprint of PVC compared to conventional fossil-fuel based PVC. The first two orders of bio-based* PVC were delivered to customers in 2021 and an increase in production, sales and relevance in our portfolio is expected in 2022.

*by mass balance approach

New Caustic Soda Blue

Vestolit's PVC production plant in Marl, Germany, produces chlorine through an energy-intensive process of electrolysis. A byproduct of the electrolysis process is caustic soda, a highly versatile substance used for a variety of applications. Vestolit is sourcing renewable electricity to support the production of low carbon caustic soda.



Two years ago, we started to explore fossil-free PVC, and in 2021 we proudly delivered our first orders of bio-based PVC. We are also looking for alternative sources for lower impact ethylene and deploying renewable energy, bringing our emissions from chlorine production closer to net zero.”



Nicholas P. Ballas
President, Polymer Solutions
(Vestolit)

**10% of caustic soda sales
will be from blue caustic
soda by 2022**



Polymer Solutions

alphagary

Product Highlights:

For more details, visit Alphagary.com

Mexiflex DOTP from recycled PET

Alphagary is working to create a new type of DOTP (dioctyl terephthalate) plasticizer using a chemical produced from recycled PET bottles. Plasticizers – used to make PVC compounds soft and flexible – are in high demand because of usability across a wide range of applications, including footwear, industrial parts and healthcare products.

This development offers a pathway for reuse of more than 150 million PET bottles annually and will provide additional options for material selection in the consumer goods and infrastructure spaces. Trials to test technical characteristics are underway.

Bio-based and circular compounds

Available with bio-based ingredients and recycled content, Alphagary’s TPE compound series EVOPRENE is finding increased interest with customers as together we seek eco-friendly solutions that do not sacrifice performance or quality. Building upon the sustainable nature of TPE compounds to be easily reclaimed and reprocessed without losing mechanical properties, the EVOPRENE- “green” series of materials crosses a wide variety of applications from automotive to consumer goods, and effectively provides an alternate solution that keeps an eye on the health of our planet and our collective future.



We are committed to helping our customers reduce their footprint, whether through integrating recycled content into our products or lowering the impact of production by investing in the best technologies and switching to renewables. Our VINASTAB 4000 series, designed for electric vehicle charging systems, among other applications, is produced using the most efficient technologies available, reducing energy consumption by 65% for every ton of stabilizer produced when compared to traditional technology.”



Gautam Nivarthi
President, Polymer Solutions
(Alphagary)



Building & Infrastructure



Sustainability Spotlight 2021

Key Activities

Wavin is an innovative solutions provider for the global Building and Infrastructure industry. Creating long-lasting, circular and energy-efficient solutions, the business is tackling some of the world's toughest challenges relevant to ensuring safe and efficient water supplies, sanitation and hygiene, climate-resilient cities and better building performance.

Key Markets

Wavin is a leading producer of above and below-ground building and infrastructure solutions in LATAM, Europe, and Asia.

Total Sales

\$2,922m USD

(33% of Orbia revenues)

Total Employees

10,537

(47% of Orbia headcount)

Top five material topics



Health and Safety



Circular Economy



Sustainable Sourcing



Innovation



Water Management Solutions

Environmental progress in 2021 versus 2020:

+43%

renewable electricity

-5%

total water withdrawal per ton

87%

waste recycled / reused / recovered in 2021

Selected Metrics	Units	2019	2020	2021
Energy intensity	MWh/ton	0.87	0.83	0.86
Renewable energy	% of total electricity consumption	6.7%	15.3%	20.2%
GHG intensity	Tons CO ₂ e/ton	0.23	0.17	0.18
Water intensity	m ³ /ton	2.38	2.41	2.27
Waste recycled/reused/recovered	% of total waste	74%	80%	87%
Incident rate	(TRIR) total employees and contractors	0.55	0.64	0.46



Building & Infrastructure



For more details, visit [Wavin.com](https://www.wavin.com)

Product Highlights:

Energy-efficient heating alternative

Buildings consume 40% of the world's energy, and 79% of household energy use is for heating and hot tap water. Based on this, there is a rising need to provide residents with the most energy-efficient solutions. Wavin's district heating units, Calefa, answer that calling.

Calefa units provide central heating and hot water to single and multifamily homes, while reducing building CO₂ emissions. They are an important element in an efficient district heating energy network, where district energy is known to operate on renewable energy sources like wind, solar, and heat pumps. Wavin's Calefa units are designed to operate at lower temperatures, taking into account elements like outside weather compensation and standby heat loss. They also produce instant hot tap water, without first having to waste several litres of cold water in the system. An energy-efficient alternative to heating based on gas and oil boilers, district energy is seen as one of the key solutions to meet sustainability goals globally.

Sustainable sewage infrastructure and surface water drainage

Recently, the city of Rotterdam issued a tender for the replacement of its sewage system. The city's main focus was on minimizing the environmental impact and Wavin was selected as the best match.

Improving Rotterdam's sewage infrastructure

With 100 km of sewers in need of replacement every year, Rotterdam is among the largest consumers of sewer pipes, manholes and drainage systems in the Netherlands.

The circularity index was an important part of the award criteria. Wavin makes plastic pipe systems out of PE, PP and PVC. For PVC, the percentage of recycled material is currently at least 40% across the product range and PE casing pipes are also designed to be circular, in line with relevant standards. Additionally, Wavin builds PP street gullies and infiltration crates from 100% recycled materials.

Another important consideration in this sustainable procurement process is the emissions-free transport of new materials to the downtown area. Wavin has the capacity to carry out last-mile delivery using zero emission (100% electric) vehicles.

Managing surface water drainage with Wavin Tegra street gully

In addition to replacing and improving the Rotterdam sewers, Wavin will also supply the Tegra street gully: a 360° water trap and self-cleaning filter that ensures optimal surface water drainage. It is made of 100% post-consumer recycled plastic and is fully recyclable. The smart design captures debris to avoid clogging the underlying water

management system or polluting the environment. This sustainably manufactured storm drain offers the best filtration system and the largest dirt collection capacity, and its low weight makes it the easiest to install and maintain. Read more [here](#).



Every decision we take now is one that will last for a generation. So, with climate change and urbanization in mind, it's important to make every decision count. Wavin helps city leaders, engineers, contractors and installers make such decisions with circular and energy-efficient solutions, ensuring safe and efficient water supplies, sanitation and hygiene, climate-resilient cities and better building performance."



Maarten Roef

President, Building & Infrastructure (Wavin)



Precision Agriculture



Sustainability Spotlight 2021

Key Activities

Netafim's leading-edge irrigation systems, services and digital farming technologies enable stakeholders to achieve significantly higher and better-quality yields, while using less water, fertilizer and other inputs. By helping farmers grow more with less, Netafim is contributing to feeding the planet more efficiently and sustainably.

Key Markets

Netafim is the world leader in the production and sale of advanced precision agriculture solutions, with strong presence in the U.S., India, LATAM, Turkey, Europe.

Total Sales

\$1,126m USD

(13% of Orbia revenues)

Total Employees

4,325

(1.9% of Orbia headcount)

Top five material topics



Precision irrigation solutions



Farmer capacity building



GHG emissions



Innovation



Employee development, engagement & retention

Environmental progress in 2021 versus 2020:

-1%

absolute Scope 1 & 2 GHG emissions

+90%

renewable electricity

73%

waste recycled / reused / recovered in 2021

Selected Metrics	Units	2019	2020	2021
Energy intensity	MWh/ton	0.84	0.85	0.86
Renewable energy	% of total electricity consumption	0.7%	5.9%	10.7%
GHG intensity	Tons CO ₂ e/ton	0.43	0.39	0.37
Water intensity	m ³ /ton	1.25	0.84	1.06
Waste recycled/reused/recovered	% of total waste	75%	71%	73%
Incident rate	(TRIR) total employees and contractors	0.55	0.64	0.65



Precision Agriculture



For more details, visit [Netafim.com](https://www.netafim.com)

Product Highlights:

Expanding sustainable rice drip-irrigation

Netafim's drip irrigation system is demonstrating an effective solution to inefficient flood irrigation. This technology reduces negative environmental impacts while increasing rice yields 10%-20% per rotation, increasing the number of annual rotations, and saving farmers 35% in energy costs.

This technology has now been installed in 2,000 hectares of rice fields globally, including Brazil, Turkey, Italy, India, and Ukraine. Netafim is significantly expanding efforts in 2022.

	Paddy	Drip
Water usage	High water-use footprint	Save 70%
Methane emission	10% of the world's methane gas emission	Close to zero
Groundwater Contamination	Pesticides • Herbicide Fertilizers	Close to zero
Arsenic presence in the grain	0.11 ppm	Close to zero
Topography	Flat	Any kind
Labor & Field preparation	Intensive Paddy preparation Planting in the water Harvesting in the mud Manual water management	Easy Dry Mechanized seeding No field leveling is required No field puddling is required Dry mechanized harvesting
Energy usage	High energy-use footprint	Save 36%

Streamline X ReGen™ launch in Europe

Streamline X ReGen™ is the first dripline to be introduced in Europe using the highest quality recycled material. Netafim has invested millions of dollars over the last decade to add recycled materials into driplines as well as increasingly eliminating the need for packaging, as part of its global sustainability action plan. Streamline X ReGen™ is unique as it maintains the same high level of product quality and performance while using a method to leverage recycled materials.

In 2022, Netafim is working to further expand its collection program for end-of-life driplines, currently operating in eight countries.

Circular solutions for dairy farms

Netafim has developed an award-winning technology to reduce the environmental impact of dairy farms. Netafim's [subsurface drip irrigation \(SDI\) system](#) recycles organic waste generated by dairy cows and optimizes levels of fresh water to fertilize and irrigate feed crops while eliminating the need for chemical fertilizers. Environmental benefits include healthier soil and root environment, water conservation, nutrient conservation, energy conservation, GHG emissions reduction and improved crop yield. Applied in pilot projects in Italy and the U.S. over the past 3 years, this presents a major achievement for advancing circularity in the agricultural industry, reducing CO₂e emissions of dairy operations by between 70 and 90% compared to traditional methods.



For more than 50 years, we have provided farmers around the world the tools and technologies to grow more with less. From increasing soil health and agricultural productivity to decreasing methane emissions and water use globally, our drip irrigation systems reduce agriculture's environmental footprint, while embracing circularity through the increased use of recycled materials in our products. And, with Gakon's integration, we now offer state-of-the-art greenhouse solutions for local food cultivation to become a reality around the world."



Gaby Miodownik
President, Precision Agriculture (Netafim)





Data Communications



Sustainability Spotlight 2021

Key Activities

Dura-Line produces more than 400 million meters of essential and innovative infrastructure annually —telecom conduit, cable-in-conduit and other HDPE products and solutions that create physical pathways for fiber and other network technologies that connect cities, homes, and people worldwide.

Key Markets

Dura-Line’s main market is the U.S., with a presence in Asia and Europe.

Total Sales

\$994m USD

(11% of Orbia revenues)

Total Employees

1,996

(9% of Orbia headcount)

Top five material topics



Health and Safety



Solutions for connectivity



Quality & safety of products



Innovation



Diversity & Inclusion

Environmental progress in 2021 versus 2020:

-5%

water withdrawal per ton

-2%

energy consumption per ton

61%

waste recycled / reused / recovered in 2021

Selected Metrics	Units	2019	2020	2021
Energy intensity	MWh/ton	0.75	0.72	0.71
Renewable energy	% of total electricity consumption	0%	3.7%	0.4%
GHG intensity	Tons CO ₂ e/ton	0.33	0.29	0.26
Water intensity	m ³ /ton	0.56	0.49	0.47
Waste recycled/reused/recovered	% of total waste	47%	56%	61%
Incident rate	(TRIR) total employees and contractors	1.59	1.90	1.76



Data Communications



For more details, visit Duraline.com

Product Highlights:

Future-proofing connectivity

Dura-Line's products are solving the challenge of connecting rural areas to high-speed broadband. Rural utilities, such as Ogden Telephone in Iowa, are utilizing Dura-Line's FuturePath Micro Duct technology to provide their current customer bases with fast internet services, while ensuring the space and flexibility to easily expand the network in the future as the population grows.

FuturePath creates extra pathways that will remain empty to be used in the future as the area continues to grow. This saves communities and utilities money on projects while guaranteeing availability of high-speed broadband connectivity for years to come. "It gives you peace of mind that you have future-proofed," said a contractor for Ogden Telephone. "We don't have to be 100% perfect on our planning because of the flexibility. With FuturePath, we have options."

Revitalizing local landmarks

Chicago-based developers are utilizing FuturePath as a cost-effective way to revitalize older, iconic buildings in the downtown area that were otherwise vulnerable to demolition due to lack of internet connectivity. Owners of brownfield buildings are now able to provide flexible and scalable fiber optic infrastructure systems to tenants, thus providing avenues for attracting and retaining tenants as well as restoring and protecting Chicago's historic buildings.

Modernizing transportation

The Smart Mobility Corridor (US33 SMC) is a research and development project that Dura-Line supports in Columbus, Ohio. This project is the longest, largest, and most comprehensive "autonomous-ready" testing environment in the nation. The project developers utilized Dura-Line's blown cable system, to support self-driving vehicle technology. Dura-Line's products saved developers significant time and labor costs, accounting for about 12% savings for construction of fiber loop compared to traditional methods.



We know that high-speed internet is essential for a more connected world; this is why we aim to bring connectivity to as many places as we can. To do this, we have developed innovative projects that enable companies to install fiber optic cables in historic buildings, preserving the community's sense of place, saving resources and renewing options for growth in the future."



Peter Hajdu

President, Data Communication
(Dura-Line)





Fluorinated Solutions



Sustainability Spotlight 2021

Key Activities

Koura provides fluorine and downstream products that support modern living in a number of significant ways. Koura operates the world's largest fluorspar mine and produces intermediates, refrigerants and propellants used in automotive, infrastructure, semiconductor, health, medicine, climate control, food cold chain, energy storage, computing and telecommunications applications.

Key Markets

Global presence

Total Sales

\$744m USD

(8% of Orbia revenues)

Total Employees

1,605

(7% of Orbia headcount)

Top five material topics



Health, safety & well-being



Investments in local communities



Governance



Innovation



Sustainable lifecycle of products

Environmental progress in 2021 versus 2020:

-2.5%

absolute Scope 1 & 2 GHG emissions

-18%

water withdrawal

-9%

total process waste

Selected Metrics	Units	2019	2020	2021
Energy intensity	MWh/ton	0.27	0.24	0.25
Renewable energy	% of total electricity consumption	0%	0%	0%
GHG intensity	Tons CO ₂ e/ton	0.08	0.08	0.08
Water intensity	m ³ /ton	1.41	1.39	1.19
Waste recycled/reused/recovered	% of total waste	35%	37%	30%
Incident rate	(TRIR) total employees and contractors	0.43	0.42	0.66



Fluorinated Solutions



For more details, visit [KouraGlobal.com](https://www.kouraglobal.com)

Product Highlights:

Li-Ion Battery performance and circularity

Koura continued to advance its comprehensive energy materials strategy, including the development of next-generation electrolyte additives and co-solvents under the Koflyte® brand. Milestones in 2021 include the acquisition of battery tech start-up Silatronix and investment in [Ascend Elements](#), a closed-loop lithium-ion battery recycler. When combined with Koura's supply chain work in key fluorinated battery materials, such as electrolyte sales, additives and binders, these actions position Koura to develop and deploy the technologies needed to improve battery efficiency and performance during use and optimize post use Li-ion battery recycling across the globe. Additionally, as a part of the U.S. Department of Energy's investment to accelerate advancements in zero-emissions vehicles, Koura was awarded \$3.1 million USD in research funding to improve the safety and fast charge capability for electric transportation applications.

Next-Generation refrigerants

Following the launch of Klea® 473A, Koura continued to revolutionize the refrigerant gas space with the launch of another of its next-generation refrigerants, Klea® 456A. This lower global-warming-potential (GWP) refrigerant presents an alternative to R-134a for automotive air conditioning systems. Klea 456A refrigerant is non-flammable and has a GWP 46% lower when compared to R-134a. Klea 456A

represents a first step as Koura broadens its sustainable refrigerants portfolio for use in a variety of applications. Additional products are in development or undergoing customer testing and are expected to be commercialized in the future.

Climate-friendly inhalers

By focusing on patient needs, careful planning and targeted R&D, Koura developed and brought the Zephex® 152a inhaler innovation to market. This metered dose inhaler (MDI) propellant has a lower global warming potential (GWP), by more than 90%, when compared to other propellants. Despite the impact of the COVID-19 pandemic on supply chains, Koura was able to successfully commercialize the product during 2021. Simultaneously, Koura launched a new formulation service designed to support early-stage development studies specializing in Zephex 152a. This transition to Zephex 152a required significant regulatory review and approval by medical and environmental regulators. Today, an estimated 50 % to 70% of major commercial formulations for MDIs are undergoing investigation for transition to Zephex 152a.



Alongside our unique ownership of raw material assets and expertise in fluorine technology, we are committed to developing next-generation battery technologies that can deliver improved safety, performance and sustainability. Bringing on board Silatronix's and Ascend Elements' expertise and technologies will further enable us to achieve these goals, support the advancement of the entire lithium-ion battery industry, and accelerate adoption of renewables."



Gregg Smith

President, Fluorinated Solutions (Koura)





Data and Performance





ESG Performance Data Summary

Environment	Units	2019	2020	2021	YoY	GRI	SASB	SDG
Scope 1 Energy	MWh	2,931,020	2,835,871	2,989,931	✓ 5%	302-1	RT-CH-130a.1	13
Electricity, cooling heat and steam	MWh	4,525,516	4,357,821	4,557,157	✓ 5%	302-1	RT-CH-130a.1	13
Total energy consumption	MWh	7,456,536	7,193,692	7,547,087	✓ 5%	302-1	RT-CH-130a.1	13
Energy intensity	MWh/ton	0.90	0.87	0.88	✓ 1%	302-3	RT-CH-130a.1	13
Renewable energy purchased	MWh	81,890	130,983	169,451	✓ 29%	302-1	RT-CH-130a.1	7, 13
Renewable energy generated	MWh	1,773	3,587	2,347	✓ -35%	302-1	RT-CH-130a.1	7, 13
Renewable energy as % of total energy	%	1%	2%	2%	✓ 0%	302-1	RT-CH-130a.1	7, 13
GHG emissions Scope 1	Tons CO ₂ e	645,300	603,969	624,317	✓ 3%	305-1	RT-CH-110a.2	13
GHG emissions Scope 2	Tons CO ₂ e	1,354,235	1,262,425	1,180,795	✓ -6%	305-2	RT-CH-110a.2	13
GHG emissions total Scope 1+2	Tons CO₂e	1,999,535	1,866,394	1,805,112	✓ -3%	305-1	RT-CH-110a.2	13
GHG emissions Scope 3	Tons CO₂e	89,933,000	85,377,000	82,439,000	✓ -3%	305-3		12
GHG emissions intensity Scope 1	Tons CO ₂ e/ton	0.08	0.07	0.07	✓ 0%	305-4	RT-CH-110a.2	13
GHG emissions intensity Scope 2	Tons CO ₂ e/ton	0.16	0.15	0.14	✓ -7%	305-4	RT-CH-110a.2	13
GHG emissions intensity Scope 1+2	Tons CO₂e/ton	0.24	0.22	0.21	✓ -5%	305-4	RT-CH-110a.2	13
Nitrogen Oxides (NOx) emissions	Tons	753	647	655	✓ 1%	305-7	RT-CH-120a.1	3, 12
Sulfur Oxides (SOx) emissions	Tons	1,181	952	1,075	✓ 13%	305-7	RT-CH-120a.1	3, 12
Volatile Organic Compounds (VOCs) emissions	Tons	92	114	121	✓ 6%	305-7	RT-CH-120a.1	3, 12
Total other air emissions	Tons	2,026	1,713	1,851	✓ 8%	305-7	RT-CH-120a.1	3, 12
Total water withdrawal	1,000 m ³	15,946	15,646	15,184	✓ -3%	303-3	RT-CH-140a.1	6, 12
Total water discharge	1,000 m ³	11,902	11,725	11,539	✓ -2%	303-4	RT-CH-140a.1	6, 12
Water withdrawal intensity	m³/ton	1.93	1.88	1.77	✓ -6%	303-3	RT-CH-140a.1	6, 12
Total non-hazardous waste	Tons	56,104	52,124	53,560	✓ 3%	306-3		12
Total hazardous waste	Tons	13,251	7,593	5,875	✓ -23%	306-3	RT-CH-150a.1	12
Total waste	Tons	69,355	59,717	62,535	✓ 5%	306-3		12
Percentage of total waste recycled, reused, recovered	%	50%	52%	52%	✓ 0%	306-3	RT-CH-150a.1	12
Percentage of total waste to landfill	%	37%	38%	35%	✓ -3%	306-3		12
Waste intensity	Tons/ton	0.008	0.007	0.007	✓ 0%	306-3		12

Notes

- YoY: Year on year variation (2021 vs. 2020)
- Figures with this check mark (✓) are third-party assured.



ESG Performance Data Summary

Social	Units	2019	2020	2021	YoY	GRI	SASB	SDG
Employees								
Total employees	No.	22,123	21,688	22,350	3%	102-8		8
Contractors	No.	2,649	3,727	4,045	11%	102-8		8
Women in management roles	%	19%	19%	22% ✓	3%	405-1		5
Employee training	hours	522,243	377,996	380,315 ✓	1%	404-1		8
Average training hours	hours/year/employee	23.61	17.43	17 ✓	-2%	404-1		8
Safety (total employees and contractors)								
Total Recordable Incident Rate	TRIR	0.71	0.75	0.61 ✓	-19%	403-9	RT-CH-320a.1	3
Lost time Incident Rate	LTIR	0.33	0.36	0.36 ✓	0%	403-9	RT-CH-320a.1	3
Severity Rate	SIR	6.62	11.58	6.90 ✓	-40%			3
Fatalities	No.	1	1	2 ✓	100%	403-9	RT-CH-320a.1	3
Community investment								
Total giving	\$	2,888,737	2,546,331	2,003,493 ✓	-21%	413		2,4,6
Total giving (cash)	%	54%	40%	78%* ✓	38%	413		2,4,6
Total giving (in-kind)	%	46%	60%	22% ✓	-38%	413		2,4,6
Governance								
Women Directors	Number (%)	3 (23%)	3 (21%)	3 (25%)	0 (4%)	405-1		5
Independent Directors	%	54%	64%	67%	3%	102-22		

Notes

• Safety rates are calculated on the basis of 200,000 hours.

* From 2021, total giving data (cash) includes: community-related commercial initiatives and enhancements.



SASB Index

Figures with this check mark (✓) are third-party assured.

Chemicals Sustainability Accounting Standard Version 2018-10

Topic	Accounting Metric	Code			
Greenhouse Gas Emissions	Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations.	RT-CH-110a.1			
		Unit	2019	2020	2021 ✓
	Gross global Scope 1 emissions	Tons CO ₂ e	645,300	603,969	624,317
	<p>At least 107,331 metric tons or 17% of Scope 1 emissions are covered under emissions-limiting regulations. See Direct Scope 1 GHG emissions (GRI 305-1) data for further details.</p> <p>Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets and an analysis of performance against those targets. RT-CH-110a.2</p> <p>In line with our goal to achieve net zero carbon emissions (Scope 1+2) by 2050, and Scope 1+2 GHG emissions reduction of 47% by 2030 (target pending submission to the Science Based Target initiative, and subsequent approval), we are planning to drive decarbonization throughout our businesses at a steady pace. Scope 1 emissions have reduced 3% since our 2019 baseline, and strategies to achieve our 2030 goal include:</p> <ul style="list-style-type: none"> • Optimizing processes to drive efficiencies • Transitioning to lower carbon energy sources and renewables • Exploring carbon capture and hydrogen investment opportunities 				
Air Quality	Air emissions of the following pollutants: (1) NOx (excluding N ₂ O), (2) SOx, (3) volatile organic compounds (VOCs) and (4) hazardous air pollutants (HAPs)	RT-CH-120a.1			
	Units	2019	2020	2021 ✓	
	NOx	Tons	753	647	655
	SOx	Tons	1,181	952	1,075
	VOCs	Tons	92	114	121
	Total other air emissions	Tons	2,026	1,713	1,851
	See Air emissions (GRI 305-7) data for further details.				



Topic	Accounting Metric	Code			
Energy Management	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable, (4) total self-generated energy	RT-CH-130a.1			
		Units	2019	2020	2021 ✓
	Total energy consumed	GJ	26,843,530	25,897,288	27,169,514
	Percentage grid electricity	%	35	35	37
	Percentage renewable	%	1	2	2
	Total self-generated energy	GJ	10,551,672	10,209,134	10,763,750
See Energy consumption (GRI 302-1) data for further details.					
Water Management	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with high or extremely high baseline water stress.	RT-CH-140a.1			
		Units	2019	2020	2021 ✓
	Total water withdrawn	1,000m ³	15,946	15,646	15,184
	Total water consumed	1,000m ³	4,044	3,920	11,539
Based on our updated 2021 assessment using the World Resources Institute (WRI) Aqueduct Version 3.0 tool, 41 of our plants are in areas of high or extremely high water-stress, representing 34% of our sites and 47% of our total water withdrawal.		Brand	% Sites in water stressed areas at business group level		
See Water consumption (GRI 303-3 to 303-5) data for further details.		Vestolit & Almagary	41%		
		Wavin	21%		
		Netafim	72%		
		Dura-Line	17%		
		Koura	63%		
		Orbia	34%		
Number of incidents of non-compliance associated with water quality permits, standards and regulations.		RT-CH-140a.2			
None in 2021. (Includes only those resulting in sanctions above \$10,000 USD)					
Description of water management risks and discussion of strategies and practices to mitigate those risks.		RT-CH-140a.3			
In 2021, we continued our water risk assessment program, covering the full spectrum of watershed risks (physical, regulatory and community-related). Vestolit completed assessments for all resin plants in Mexico and Colombia (representing 42% of Orbia's consumption and located in water stress areas). Based on these: context-based water targets for each of these sites are being analyzed; risk mitigation plans are being developed; alternative water sources are being evaluated; and water risks are being embedded in overall risk processes.					



Topic	Accounting Metric	Code		
Hazardous Waste Management	Amount of hazardous waste generated, percentage recycled	RT-CH-150a.1		
		Units	2019	2020
	Hazardous waste generated	Tons	13,251	7,593
	Percentage recycled	%	-	5%
	See Waste generated (GRI 306-3 to 306-5) data for further details.			
Community Relations	Discussion of engagement processes to manage risks and opportunities associated with community interests.	RT-CH-210a.1		
	<p>At Orbia, we fulfil our purpose through our solutions for resilience that address the world's most pressing social and environmental challenges. At the same time, we share a responsibility to contribute to improving the lives of the people in the communities where we do business. Our approach is based on helping alleviate urgent critical needs while contributing to strengthen communities through collaboration, partnership and the pursuit of longer term positive social impact. We engage with representatives of stakeholders in our communities to gain insight that will help us address their concerns and expectations. Specifically, we engage with local communities close to our factories and also with NGOs that represent broader national, regional and global interests relating to economic development, and social or environmental needs. We aim to develop contributions and partnerships to deliver long-term value that benefits communities and societies in general. Our engagements include: partnerships in programs for local impact; meetings with NGOs, community leaders and local governments to understand needs and identify common interests; academic forums on innovation, and sustainable development and engagement with Research Centers. Additionally, we are currently developing a set of tools that will help our operations assess risks, map their communities and interest groups to define strategic approaches for stakeholder engagement. Examples of these engagement activities can be found in different sections of our Thriving Communities.</p>			



Topic	Accounting Metric			Code
Workforce Health & Safety	(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees.			RT-CH-320a.1
	2019			
		Employees	Contractors	Total
	Total Recordable Incident Rates (TRIR)	0.76	0.48	0.71
	Lost Time Incident Rate (LTIR)	0.36	0.20	0.33
	Fatality rate	0	0.019	0.004
	2020			
		Employees	Contractors	Total
	Total Recordable Incident Rates (TRIR)	0.77	0.63	0.75
	Lost Time Incident Rate (LTIR)	0.36	0.37	0.36
	Fatality rate	0.005	0	0.004
	2021			
		Employees	Contractors	Total
	Total Recordable Incident Rates (TRIR)	0.61 ✓	0.59 ✓	0.61 ✓
	Lost Time Incident Rate (LTIR)	0.36 ✓	0.3 ✓	0.36 ✓
Fatality rate	0.008 ✓	0 ✓	0.007 ✓	
See Incident rates (GRI 403-9) data for further details.				



Topic	Accounting Metric	Code								
	<p>Description of efforts to assess, monitor and reduce exposure of employees and contract workers to long-term (chronic) health risks.</p> <p>We aspire to create safe places to work throughout Orbia, with a community of individuals who are committed to working safely and to implementing all our policies, standards, frameworks, supported by processes that enable them to do so. In this way, we make safety a habit that is consistently embedded in everything we do. No rule book can account for every eventuality, so we rely on a safety mindset and culture to complement the systems we have in place. While we must continue this work to achieve our vision of zero injuries, we are encouraged by a notable reduction in incident rates across the business over the past several years.</p> <p>Work-related hazards are assessed through our regular safety risk assessments, and we have not identified any significant hazards that pose a risk of ill-health. Instances of work-related ill-health reported for 2021 were not identified with specific hazards.</p> <p>Work-related hazards that pose a risk of high-consequence injuries are not specifically identified as distinct from other hazards. All work-related hazards are addressed through our safety assessments and risks are minimized through targeted improvements in procedures, protocols, training and communications. See Health & Safety for further details.</p>	RT-CH-320a.2								
Product Design for Use-phase Efficiency	<p>Revenue from products designed for use-phase resource efficiency.</p> <p>23% This figure represents the percentage of revenues from precision irrigation (water reduction, reduced soil contamination), stormwater management (climate resilience addressing flooding and groundwater depletion); indoor climate solutions (energy reduction); low GWP medical propellants (low-carbon); trenchless pipe rehabilitation solutions (fewer emissions and pollution, longevity, reduce water loss); resins that result in energy consumption reduction by our customers; and those that extend product use such as Dura-Line's FuturePath. This figure excludes revenue from Orbia products made using recycled content, per SASB definition, although a portion of the products in some of the mentioned ranges are made with recycled raw materials. See Orbia's Sustainable Solutions report for further details and examples.</p>	RT-CH-410a.1								
Safety & Environmental Stewardship of Chemicals	<p>(1) Percentage of products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances, (2) percentage of such products that have undergone a hazard assessment.</p> <p>Currently, the following information is available at Orbia level, regarding this topic. The majority of our products from Koura, Vestolit, Alphagary, and Dura-Line businesses have undergone risk assessments. These are considered our highest risk businesses. Wavin and Netafim products are considered significantly lower risk.</p> <table border="1"> <thead> <tr> <th></th> <th>% in terms of revenues</th> </tr> </thead> <tbody> <tr> <td>Products that contain restricted substances in the Annex XVII of REACH Regulation</td> <td>6% ✓</td> </tr> <tr> <td>Products that contain substances on the Candidate List of substances of very high concern (SVHC) for Authorization above 0.1% by weight</td> <td>2% ✓</td> </tr> <tr> <td>% of products that have undergone risk assessment for their potential impact on human health and the environment</td> <td>61% ✓</td> </tr> </tbody> </table>		% in terms of revenues	Products that contain restricted substances in the Annex XVII of REACH Regulation	6% ✓	Products that contain substances on the Candidate List of substances of very high concern (SVHC) for Authorization above 0.1% by weight	2% ✓	% of products that have undergone risk assessment for their potential impact on human health and the environment	61% ✓	RT-CH-410b.1
	% in terms of revenues									
Products that contain restricted substances in the Annex XVII of REACH Regulation	6% ✓									
Products that contain substances on the Candidate List of substances of very high concern (SVHC) for Authorization above 0.1% by weight	2% ✓									
% of products that have undergone risk assessment for their potential impact on human health and the environment	61% ✓									



Topic	Accounting Metric	Code
	<p>Discussion of strategy to (1) manage chemicals of concern and (2) develop alternatives with reduced human and/or environmental impact.</p> <p>Product Stewardship Approach: We maintain compliance with key standards and good practices. Our business group teams have been staffed with subject matter experts to ensure full compliance across our wide range of geographies and products.</p> <p>Various activities, in particular targeted at finding viable replacements for phthalate-based products are being undertaken by Alphagary. Our Leominster production site is part of the Toxic Use Reduction Institute (TURI) See Health & Safety for further details.</p>	
<p>Genetically Modified Organisms</p>	<p>Percentage of products by revenue that contain genetically modified organisms (GMOs).</p> <p>Not applicable. None of our products contain GMOs.</p>	<p>RT-CH-410c.1</p>
<p>Management of the Legal & Regulatory Environment</p>	<p>Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry.</p> <p>Some examples from our Business Groups include:</p> <p>Koura is an active member of the Global FACT (Forum for Advanced Climate Technologies), promoting the development of low GWP propellants and refrigerants alongside other key players in the fluorinated gas market such as Arkema, Chemours and Honeywell. They are also members of the Alliance for Responsible Atmospheric Policy.</p> <p>Our Wavin Sustainability leaders are very active with the TEPPFA regarding circular economy initiatives and influencing policy around this topic in Europe. Wavin was also active in the 2021 Climate Adaptation Summit.</p> <p>Vestolit and Alphagary are members of Asociación Colombiana de Plásticos (ACOPLASTICOS), a Colombian association that promotes sustainable development in the sector while serving as a spokesperson before the government and society to comply with best-in-class standards.</p> <p>In the U.S., Vestolit is an active member of The Vinyl Institute, where there are ongoing discussions to promote a per pound tax to fund \$25M of recycling infrastructure investment. This would be an industry led/managed initiative.</p>	<p>RT-CH-530a.1</p>



GRI Index

Figures with this check mark (✓) are third-party assured.

GRI 102

GRI Standard 102: General Disclosures 2016	Page/Response
102-1	Name of the organization Orbia Advance Corporation, S.A.B. de C.V.
102-2	Activities, products, and services About Orbia
102-3	Location of headquarters About Orbia
102-4	Location of operations About Orbia
102-5	Ownership and legal form About Orbia
102-6	Markets served About Orbia
102-7	Scale of the organization About Orbia
102-8	Information on employees page 93
102-9	Supply chain Supply Chain
102-10	Significant changes None
102-11	Precautionary Principle Environment
102-12	External initiatives Thriving Communities
102-13	Membership of associations page 94
102-14	Statement from senior manager Message from Chairman and CEO
102-16	Values, principles, standards About Orbia
102-18	Governance structure Corporate Governance & Risk Management
102-40	List of stakeholder groups page 95

GRI Standard 102: General Disclosures 2016	Page/Response
102-41	Collective bargaining agreements page 94
102-42	Identifying and selecting stakeholders page 95
102-43	Stakeholder engagement page 95
102-44	Key topics and concerns raised page 95
102-45	Entities included About Orbia
102-46	Report content and topic Boundaries About Orbia
102-47	List of material topics Materiality Assessment Results
102-48	Restatements of information None
102-49	Changes in reporting None
102-50	Reporting period About Orbia
102-51	Date of most recent report About Orbia
102-52	Reporting cycle About Orbia
102-53	Contact point About Orbia
102-54	Reporting in accordance with GRI Standards About Orbia
102-55	GRI content index page 91
102-56	External assurance ESG Databook 2021 - page 44



GRI Index: GRI 200, 300, 400 Standards

Material Topic	Standard	Item	Description	Disclosure
Solutions for resilience	Non-GRI topic		Sustainable Solutions	All
Innovation	Non-GRI topic		Sustainability Report 2021	Impactful Ventures
Circular economy	Non-GRI topic		Sustainability Report 2021	Circularity
Quality and safety of products	GRI 416: Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of products	61% of our products are assessed
		416-2	Incidents of non-compliance concerning the health and safety impacts of products	None
Greenhouse gas emissions	GRI 302: Energy 2016	302-1	Energy consumption within the organization	page 96
		302-3	Energy intensity	page 97
	GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	page 97
		305-2	Energy indirect (Scope 2) GHG emissions	page 97
		305-3	Other indirect (Scope 3) GHG emissions	page 98
		305-4	GHG emissions intensity	page 98
		305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other air emissions	page 98
Water use and discharge	GRI 303: Water 2018	303-1	Interactions with water as a shared resource	Water
		303-2	Management of water discharge-related impacts	Water
		303-3	Water withdrawal	page 99
		303-4	Water discharge	page 100
		303-5	Water consumption	page 101
Waste management*	GRI 306: Waste 2020	306-1	Waste generation and significant waste-related impacts	Circularity
		306-2	Management of significant waste-related impacts	Circularity
		306-3	Waste generated	page 101
		306-4	Waste diverted from disposal	page 102
		306-5	Waste directed to disposal	page 103

* Other material topics, not in the top ten most material topics.



Material Topic	Standard	Item	Description	Disclosure
Employee development, engagement and retention	GRI 401: Employment	401-1	New employee hires and turnover	page 104
		404-1	Average hours of training per year per employee	page 105
	GRI 404: Training and Education 2016	404-2	Programs for upgrading employee skills and transition assistance programs	Development
		404-3	Percentage of employees receiving regular performance and career development reviews	Development
Diversity and Equal Opportunities*	GRI 405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	page 106
		405-2	Pay Equity by level and region	page 107
Health and Safety	GRI 403: Occupational Health and Safety 2018	403-1	Occupational health and safety management system	Health & Safety
		403-2	Hazard identification, risk assessment, and incident investigation	Health & Safety
		403-3	Occupational health services	Health & Safety
		403-4	Worker participation, consultation, and communication on occupational health and safety	Health & Safety
		403-5	Worker training on occupational health and safety	Health & Safety
		403-6	Promotion of worker health	Health & Safety
		403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Health & Safety
		403-9	Work-related injuries	page 107
		403-10	Work-related ill health	page 109
		Investments in local communities	GRI 413: Local Communities 2016	413-1
GRI 203: Indirect economic impacts 2016	203-1		Infrastructure investments	page 82
Ethical Behavior and Compliance*	GRI 205: Anti-corruption 2016	205-2	Communication and training about anti-corruption policies and procedures	Ethics & Compliance
	GRI 307: Environmental Compliance 2016	307-1	Non-compliance with environmental laws and regulations	page 103

* Other material topics, not in the top ten most material topics.



GRI 102-8 Information on employees

Employees by region and gender	2019				2020				2021		
	Women	Men	Undeclared	Total	Women	Men	Undeclared	Total	Women	Men	Total
U.S. & CANADA	266	1,488	55	1,809	305	1,636	14	1,955	383	1,818	2,201
LATAM	1,871	8,896	7	10,774	1,780	8,651	6	10,437	2,007	8,687	10,694
EUROPE	1,246	5,044	25	6,315	1,242	4,940	7	6,189	1,306	5,054	6,390
AMEA	446	2,748	31	3,225	459	2,636	12	3,107	500	2,595	3,095
TOTAL	3,829	18,176	118	22,123	3,786	17,863	39	21,688	4,196	18,154	22,350

Employees by contract	2019				2020				2021		
	Women	Men	Undeclared	Total	Women	Men	Undeclared	Total	Women	Men	Total
Full time	3,599	17,985	173	21,702	3,582	17,707	118	21,328	3,935	17,971	21,947
Part time	230	191	2	421	204	156	0	360	220	183	403
% Full time				98%				98%			98%
Permanent	3,634	17,654	174	21,406	3,621	17,336	118	20,994	3,940	17,503	21,443
Temporary	195	522	1	717	165	527	0	694	256	651	907
% Permanent				97%				97%			96%

Non-payroll workers	U.S. & CANADA	LATAM	EUROPE	AMEA	TOTAL
2019	97	1,141	273	1,138	2,649
2020	112	2,174	434	1,007	3,727
2021	77	2,156	620	1,192	4,045
% in 2021	2%	53%	15%	30%	18%



GRI 102-13 Membership of associations

The following are key global or regional associations we are members of or significantly support. There are additional memberships we maintain on a country-by-country basis.

Brand	Name of the Organization	Country
Koura	Global Forum for Advanced Climate Technologies (FACT)	United States
Koura & Vestolit	Asociacion Nacional de la Industria Química AC (ANIQ)	Mexico
Koura & Vestolit	Acoplásticos	Colombia
Vestolit	The Vinyl Institute (VI)	United States
Vestolit	European Council of Vinyl Manufacturers (ECVM) VinylPlus	European Union
Wavin	The European Plastic Pipes and Fittings Association (TEPPFA)	European Union
Wavin	British Plastics Federation (BPF)	United Kingdom
Wavin	Asociación Mexicana de Industrias Plásticas A.C. (Mexican Association of Plastic Industries A.C.) (AMITUP)	Mexico
Netafim	Irrigation Association	United States
Netafim	Israel Export Institute	Israel
Netafim	Sustainable Agriculture Initiative (SAI) Platform	Global
Dura-Line	Fiber to the Home - COUNCIL EUROPE (FTTH)	European Union
Dura-Line	Plastic Pipe Institute (PPI)	United States

GRI 102-41 Collective bargaining agreements

Employees with collective bargaining agreements	U.S. & CANADA	LATAM	EUROPE	AMEA	TOTAL
2019	21	7,689	4,588	128	12,426
2020	-	6,308	3,371	152	9,831
2021	0	6,526	2,849	129	9,504
% in 2021	0%	68%	30%	1%	41%

A dash means data was not available. It does not indicate zero employees.



GRI 102-42 Identifying and selecting stakeholders

GRI 102-43 Stakeholder engagement

GRI 102-44 Key topics and concerns raised

Stakeholders are individuals or groups who are affected by and influence our business operations. We engage with representatives of a wide group of stakeholders in order to gain insight that will help us minimize risk to our business, understand and benefit from opportunities and address stakeholder concerns and expectations.

Our ongoing consultations with stakeholders have influenced the development of our sustainability strategy and priority sustainability issues. We conducted specific engagement to define our material topics in 2019 as described in the [Materiality Assessment Results](#).

Who		What	How
Customers	Thousands of customers around the world in different business sectors.	Customer service, quality and compliance, competitive pricing, overall value chain efficiency.	<ul style="list-style-type: none"> • Client meetings • Industry meetings and conferences • Joint projects including workshops, training and education programs, and field trials.
Employees	More than 22,000 direct employees in our businesses around the world.	Professional development, fair compensation and benefits, a safe and healthy workplace, and meaningful work.	<ul style="list-style-type: none"> • Satisfaction surveys • Performance reviews • Internal communications
Investors	Current shareholders and institutional investors, investment analysts and stock exchange.	Return on investment through constant and sustainable growth, robust governance, transparency.	<ul style="list-style-type: none"> • Annual financial and sustainability reporting • Investor meetings and roadshows • Notifications through the Mexican Stock Exchange and the National Securities Commission
Communities, NGOs and academia	Local communities close to our factories and broader national, regional and global NGOs with interests relating to economic development, social or environmental needs.	Contribution and partnership to deliver long-term value that benefits communities and societies in general, engagement to understand community needs and responsiveness, and upholding human rights.	<ul style="list-style-type: none"> • Partnerships in programs for local impact • Meetings with NGOs, community leaders and local governments to understand needs and identify common interests • Academic forums on innovation and sustainable development • Engagement with research centers
Suppliers and Distributors	A wide range of thousands of suppliers across all our business sectors in tens of countries.	Long-term commercial partnerships, fair dealing, opportunities for diverse suppliers, fair negotiations.	<ul style="list-style-type: none"> • Supplier evaluation systems • Supplier meetings • Conferences and tradeshow • Joint projects
Regulators	National governments, regional councils and local municipalities in all the countries in which we operate.	Trusting relationships based on compliant and ethical conduct and respect for Human Rights, transparency and timely reporting, collaboration to advance public policy.	<ul style="list-style-type: none"> • Public-private partnerships for social benefit • Industrial guilds and associations • Discussion forums on sector and social policies • Government reviews and audits • Reporting on corporate performance





GRI 302-1 Energy consumption within the organization

Energy	Units	2016	2017	2018	2019	2020	2021 ✓	Change in 2021
Natural gas	MWh	2,526,510	2,450,339	2,471,052	2,519,303	2,512,007	2,695,655	7%
Gasoline	MWh	7,821	12,394	12,874	10,324	9,174	9,862	8%
Diesel	MWh	60,467	78,805	78,895	98,929	75,539	82,565	9%
LPG derived gases	MWh	113,434	112,891	136,741	130,179	106,963	124,689	17%
Mineral coal	MWh	192,298	198,269	183,184	169,816	127,836	73,953	-42%
Renewable electricity generated	MWh	-	-	-	1,773	3,587	2,347	-35%
Biofuels	MWh	-	-	-	696	765	859	12%
Total Scope 1- Energy	MWh	2,900,530	2,852,698	2,882,746	2,931,020	2,835,871	2,989,931	5%
Purchased electricity	MWh	2,445,311	2,457,173	2,723,899	2,580,558	2,486,917	2,590,547	4%
Renewable electricity purchased	MWh	-	-	55,737	81,890	130,983	169,451	29%
Scope 2 - Energy (electricity)	MWh	2,445,311	2,457,173	2,723,899	2,662,448	2,617,900	2,759,998	5%
Scope 2 - Energy (cooling, heating, steam)	MWh	N/A	N/A	N/A	1,863,068	1,739,921	1,794,811	3%
Total energy consumption	MWh	5,345,841	5,309,871	5,606,645	7,456,536	7,193,692	7,544,740	5%

Notes

- Data for purchased cooling, heating and steam, is available from 2019.
- Precision agriculture business group data (Netafim) is included from 2018.
- A dash means data was not available. It does not indicate zero consumption.
- Renewable electricity purchased was not reported separately in our 2018 report. This value was included in purchased electricity.
- Total energy consumption is reported as gross energy.
- LPG derived gases contain butane, propane and LPG.

Energy consumption summary	Units	2016	2017	2018	2019	2020	2021 ✓	Change in 2021
Scope 1 - Energy	MWh	2,900,530	2,852,698	2,882,746	2,931,020	2,835,871	2,989,931	5%
Scope 2 - Energy (electricity)	MWh	2,445,311	2,457,173	2,723,899	2,662,448	2,617,900	2,759,998	5%
Scope 2 - Energy (cooling, heating, steam)	MWh	N/A	N/A	N/A	1,863,068	1,739,921	1,794,811	3%
Total energy consumption	MWh	5,345,841	5,309,871	5,606,645	7,456,536	7,193,692	7,544,740	5%

Net energy consumption	Units	2020	2021
Gross energy consumption	MWh	7,193,692	7,547,087
Sold energy	MWh	277,836	284,726
Net energy consumption	MWh	6,915,854	7,262,362

Notes

- Systems to capture sold energy are in place since 2020.



GRI 302-3 Energy intensity

	Units	2016	2017	2018	2019	2020	2021 ✓	Change in 2021
Total Scope 1 - Energy	MWh/ton	0.68	0.64	0.61	0.36	0.34	0.35	3%
Scope 2 - Energy (electricity)	MWh/ton	0.58	0.55	0.58	0.32	0.32	0.32	0%
Scope 2 - Energy (cooling, heating, steam)	MWh/ton	-	-	-	0.23	0.21	0.21	0%
Total energy	MWh/ton	1.26	1.19	1.19	0.90	0.87	0.88	1%

Notes

- In 2019, we adopted a new methodology for calculating intensities, as requested by key stakeholders. Figures from 2019 show intensities on the basis of tons of product manufactured (including production of intermediate materials). In prior years, intensities were calculated mainly on the basis

of tons sold, always lower than tons manufactured. Therefore, from 2019 onward, intensity figures for energy, GHG emissions, water and waste are not directly comparable to prior years, although they are a closer reflection of our actual impact. Data considers gross energy consumption.

GRI 305-1 Direct (Scope 1) GHG emissions

GRI 305-2 Energy indirect (Scope 2) GHG emissions

Greenhouse gas emissions	Units	2016	2017	2018	2019	2020	2021 ✓	Change in 2021
Scope 1 - GHG (energy)	Tons CO ₂ e	613,004	587,487	589,078	588,002	547,669	565,790	3%
Scope 1 - GHG (process)	Tons CO ₂ e	-	-	-	57,298	56,300	58,526	4%
Scope 2 - GHG (electricity)	Tons CO ₂ e	1,061,637	1,173,202	1,215,035	1,046,742	965,325	865,820	-10%
Scope 2 - GHG (cooling, heating, steam)	Tons CO ₂ e	-	-	-	307,493	297,100	314,975	6%
Total Scope 1 and Scope 2	Tons CO₂e	1,674,641	1,760,689	1,804,113	1,999,535	1,866,394	1,805,112	-3%

GHG emissions: Market vs. Location-based	Units	2020		2021 ✓	
		Market-based	Location-based	Market-based	Location-based
Scope 2 (purchased electricity)	Tons CO ₂ e	965,325	1,088,758	865,820	1,024,656
Scope 2 (cooling, heating, steam)	Tons CO ₂ e	297,100	297,100	314,975	314,975
Total Scope 2	Tons CO₂e	1,262,425	1,385,858	1,180,795	1,339,631

Notes

- Scope 1 emission factors for fuels and gases use DEFRA 2019 and EPA 2018.
- Scope 2 emission factors for cooling, heating and steam use factors provided by our suppliers. When these are not available, EPA factors are used.
- Scope 2 emissions are market based from 2019, but location based in prior years.
- Scope 2 market-based emission factors are sourced from the International Energy Agency (IEA) data 2021 version where supplier emission factors are not available.
- Our inventory does not consider residual emission factors yet. However, 71% of our scope 2 emissions are calculated using supplier emission factors.
- Scope 2 location-based emissions use IEA data 2021 version for all sites except Mexico facilities which used CRE, 2020 version.
- 2019 Scope 1 and 2 data has been updated to include process emissions not related to energy in Scope 1 and purchased heating, steam and cooling in Scope 2. This change impacts intensities.



GRI 305-3 Other Indirect (Scope 3) GHG emissions

Category	Units	2019	2020	2021 ✓
Upstream activities (Cat 1 – 7)	Tons CO ₂ e	6,006,000	6,026,000	6,221,000
Category 11: Use of sold products	Tons CO ₂ e	26,499,000	25,964,000	23,158,000
Category 12: End-of-life treatment of sold	Tons CO ₂ e	56,882,000	52,841,000	52,514,000
Downstream activities (Cat 8, 9,15)	Tons CO ₂ e	546,000	546,000	546,000
Total Scope 3	Tons CO₂e	89,933,000	85,377,000	82,439,000

Notes

- New figures reflect improvements in our Scope 3 inventory completeness.
- Relevant category 11 and 12 emissions are based on IPCC's AR4 GWP factors.
- Orbia is not a lessor and does not operate franchises, therefore categories 13 and 14 are not applicable.
- The highly considerable efforts required to calculate category 10 emissions have been determined as not cost-effective.
- For further methodology details, please refer to our [CDP Climate Change response](#).

GRI 305-4 GHG emissions intensity

	Units	2016	2017	2018	2019	2020	2021 ✓	Change in 2021
Scope 1	Tons CO ₂ e/ton	0.14	0.13	0.13	0.08	0.07	0.07	0%
Scope 2	Tons CO ₂ e/ton	0.25	0.26	0.26	0.16	0.15	0.14	-7%
Total Scope 1 and Scope 2	Tons CO₂e/ton	0.39	0.39	0.38	0.24	0.22	0.21	-5%

Notes

- See note to calculation of intensities in GRI 302-3.
- 2019 Scope 1 and 2 data has been updated to include process emissions not related to energy in Scope 1 and purchased heating, steam and cooling in Scope 2. This change impacts intensities.

GRI 305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other air emissions

	Units	2016	2017	2018	2019	2020	2021 ✓	Change in 2021
NOx	Tons	760	779	689	753	647	655	1%
SOx	Tons	1,309	1,257	1,355	1,181	952	1,075	13%
VOCs	Tons	0	83	108	92	114	121	6%
Total other air emissions	Tons	2,069	2,119	2,152	2,026	1,713	1,851	8%

Notes

- VOCs from 2020 include data from our Marl site (Vestolit), extrapolated based on historical and production data.



GRI (2018) 303-3 Water withdrawal by source

Source	Units	2016	2017	2018	2019	2020	2021 ✓	Change in 2021
Surface water (including rainwater)	1,000 m ³	8,171	8,670	8,262	9,843	9,315	9,253	-1%
Groundwater	1,000 m ³	4,937	5,178	5,341	4,861	5,163	4,703	-9%
Third party water (municipal)	1,000 m ³	2,895	2,480	2,150	1,242	1,168	1,228	5%
Total water withdrawal	1,000 m³	16,003	16,328	15,753	15,946	15,646	15,184	-3%
Water withdrawal intensity	m³/ton	3.76	3.66	3.35	1.93	1.88	1.77	-6%

GRI (2018) 303-3 Water withdrawal in water stress areas

	Units	2019	2020	2021	Change in 2021	
High to extremely high water stress area (40%->80%)	Surface water	1,000m ³	5,029	4,825	4,541	-6%
	Groundwater	1,000m ³	2,106	2,497	2,133	-15%
	Municipal	1,000m ³	281	199	224	13%
	Wastewater from a third party	1,000m ³	0	156	211	36%
	Total	1,000m³	7,416	7,677	7,110	-7%
Medium water stress or lower (<40%)	Surface water	1,000m ³	4,814	4,490	4,712	5%
	Groundwater	1,000m ³	2,753	2,666	2,571	-4%
	Municipal	1,000m ³	960	813	792	-3%
	Total	1,000m³	8,527	7,969	8,075	1%
Total	1,000m³	15,946	15,646	15,184	-3%	



GRI (2018) 303-4 Water discharge by quality and destination

Destination	Units	2019	2020	2021 ✓	Change in 2021
Surface water	1,000 m ³	9,408	8,036	7,670	-5%
Seawater	1,000 m ³	-	1,339	1,448	8%
Groundwater	1,000 m ³	14	7	11	53%
Third party (municipal)	1,000 m ³	2,481	2,343	2,411	3%
Total water discharge	1,000 m³	11,902	11,725	11,539	-2%

Water discharge quality	Units	2019	2020	2021 ✓	Change in 2021
Total Suspended Solids (TSS)	Tons	131	151	138	-8%
Chemical Oxygen Demand (COD)	Tons	378	403	481	19%
Biochemical Oxygen Demand (BOD)	Tons	87	129	152	18%
Total organic carbon (TOC)	Tons	120	142	162	14%
Total solids	Tons	716	826	933	13%

Notes

- Wastewater quality is strictly governed by local regulations, and parameters are set specifically for each watershed. Orbia's operations comply with these local regulations. Therefore, wastewater discharge quality is reported as applicable only to chemical plants.

GRI (2018) 303-4 Water discharge in water stress areas

		Units	2019	2020	2021	Change in 2021
High to extremely high water stress area (40%->80%)	Surface water	1,000m ³	3,314	3,375	3,155	-7%
	Groundwater	1,000m ³	6	0	0	NA
	Sewage	1,000m ³	573	509	540	6%
	Total	1,000m³	3,893	3,884	3,695	-5%
Medium water stress or lower (<40%)	Surface water	1,000m ³	6,094	4,661	4,515	-3%
	Seawater	1,000m ³	-	1,339	1,448	8%
	Groundwater	1,000m ³	8	7	10	50%
	Sewage	1,000m ³	1,907	1,834	1,871	2%
Total	1,000m³	8,009	7,841	7,845	0%	
Total	1,000m³	11,902	11,725	11,539	-2%	



GRI (2018) 303-5 Water consumption

Water balance	Units	2019	2020	2021 ✓	Change in 2021
Water withdrawn	1,000 m ³	15,946	15,646	15,184	-3%
Water discharged	1,000 m ³	11,902	11,725	11,539	-2%
Water consumed	1,000 m³	4,044	3,920	3,645	-7%
Water % discharged	%	75%	75%	76%	1%

Notes

- Details of water quality (freshwater and other water) split not currently available.

GRI (2020) 306-3 Waste generated

		Units	2019	2020	2021 ✓	Change in 2021
Production - related waste	Hazardous waste	Tons	13,251	7,593	5,875	-23%
	Non-hazardous waste	Tons	56,104	52,124	53,560	3%
Special project waste	Hazardous waste	Tons	-	-	143	NA
	Non-hazardous waste	Tons	-	-	2,958	NA
Total waste	Ton		69,355	59,717	62,535	5%
Waste intensity	Tons/ton		0.008	0.007	0.007	0%

Notes

- Values represent waste disposed.
- See note to calculation of intensities in GRI 302-3.
- Split of waste generated by composition not available.
- From 2021, waste from special projects is reported separately. Waste from special projects refers to activities unrelated to normal production operations in our sites and can include construction, demolition, soil removals, etc.



GRI (2020) 306-4 Waste diverted from disposal

	Units	2019	2020	2021 ✓	Change in 2021
Hazardous waste					
Preparation for reuse	Tons	303	227	224	-1%
Recycling	Tons	2,122	184	161	-12%
Recovery	Tons	3,634	3,303	2,303	-30%
Incineration with energy recovery	Tons	-	-	877	NA
Special project waste	Tons	-	-	-	NA
Total	Tons	6,059	3,714	3,565	-4%
Non-hazardous waste					
Preparation for reuse	Tons	6,064	4,881	4,835	-1%
Recycling	Tons	20,973	19,979	22,555	13%
Recovery	Tons	2,001	2,476	2,739	11%
Incineration with energy recovery	Tons	-	-	2,717	NA
Special project waste	Tons	-	-	977	NA
Total	Tons	29,038	27,336	33,823	24%
Total waste diverted	Tons	35,097	31,050	37,388	20%

Notes

- Values reported under recovery include a portion of waste incinerated with energy recovery. From 2021, this data is broken down.
- Orbia considers incineration with energy recovery as a diversion method, and is aligned with our Zero Waste to Landfill definition.



GRI (2020) 306-5 Waste directed to disposal

	Units	2019	2020	2021 ✓	Change in 2021
Hazardous waste					
Incineration without energy recovery	Tons	1,284	2,660	1,335	-50%
Landfill	Tons	1,599	798	717	-10%
Other	Tons	4,309	420	257	-39%
Special project waste	Tons	-	-	143	NA
Total	Tons	7,192	3,878	2,452	-37%
Non-hazardous waste					
Incineration without energy recovery	Tons	1,654	1,716	421	-75%
Landfill	Tons	24,485	22,031	19,663	-11%
Other	Tons	926	1,041	630	-40%
Special project waste	Tons	-	-	1,980	NA
Total	Tons	27,065	24,788	22,694	-8%
Total waste directed to disposal	Tons	34,257	28,666	25,139	-12%

GRI (2016) 307-1 Non-compliance with environmental laws and regulations

	Units	2019	2020	2021 ✓
Violations of environmental laws and/or regulations	Number	0	0	0
Fines and penalties related to said violations	USD	0	0	0

Notes

- Includes violations resulting in fines or penalties above 10,000 USD only



GRI 401-1 New employee hires and turnover

Employee new hires summary	2021		
	Women	Men	Total
< age 30	398	1,456	1,854
age 30 - 50	560	1,656	2,216
> age 50	73	338	411
All new hires	1,031	3,450	4,481
New hire percentage (of year end headcount)	23%	77%	100%

Employee turnover summary	2021		
	Women	Men	Total
< age 30	168	921	1,089
age 30 - 50	357	1,456	1,813
> age 50	99	657	756
All leavers	624	3,034	3,658
Turnover percentage (of year end headcount)	17%	83%	-

Employee new hires by gender and region	2021		
	Women	Men	Total
U.S. & CANADA	167	710	877
LATAM	545	1,370	1,915
EUROPE	187	751	938
AMEA	132	619	751
All new hires	1,031	3,450	4,481
Percentage by gender	23%	77%	100%

Employee turnover summary	2021		
	Women	Men	Total
Voluntary turnover rate	2%	7%	9%
Involuntary turnover rate	1%	7%	8%
Total	3%	14%	17%

Notes

- Voluntary / involuntary rates calculated on basis of total company headcount.



Employee leavers by age and region	2021			Total
	< age 30	age 30 - 50	> age 50	
U.S. & CANADA	195	289	130	614
LATAM	459	783	254	1,496
EUROPE	146	361	280	787
AMEA	289	380	92	761
All leavers	1,089	1,813	756	3,658
Percentage by age	30%	49%	21%	100%

Employee leavers by gender and region	2021		Total
	Women	Men	
U.S. & CANADA	94	520	614
LATAM	301	1,195	1,496
EUROPE	140	647	787
AMEA	89	672	761
All leavers	624	3,034	3,658
Percentage by gender	17%	83%	100%

GRI 404-1 Average hours of training per year per employee

Employee training by category (hours)	2019	2020	2021 ✓
Managers and professional employees	211,826	167,546	204,676
Other employees	310,416	210,450	175,639
All training hours	522,243	377,996	380,315
Average hours per employee per year	23.61	17.43	17



GRI 405-1 Diversity of governance bodies and employees

Employees by level and age	Age	2019	2020	2021
Managers	<age 30	94	72	87
	age 30-50	1,548	1,553	1,670
	>age 50	732	766	839
Professional employees	<age 30	1,636	1,301	1,146
	age 30-50	4,702	5,004	4,623
	>age 50	1,449	1,600	1,503
Other employees	<age 30	2,649	2,155	2,503
	age 30-50	6,271	6,476	6,979
	>age 50	2,617	2,761	2,913
All employees	<age 30	4,379	3,528	3,736
	age 30-50	12,521	13,033	13,274
	>age 50	4,798	5,127	5,253
All employees by age as a percentage of total employees	<age 30	20%	16%	17%
	age 30-50	57%	60%	59%
	>age 50	22%	24%	24%

Employees by level and gender	Levels	2019	2020	2021 ✓
Women	Managers	452	455	561
	Professional employees	2,301	2,306	2,210
	Other employees	1,076	1,026	1,423
Men	Managers	1,922	1,920	2,036
	Professional employees	5,486	5,596	5,072
	Other employees	10,461	10,337	10,970
% of women by level as a percentage of total employees by level	Managers	19%	19%	22%
	Professional employees	30%	29%	30%
	Other employees	9%	9%	11%
	All employees	17%	17%	19%



GRI 405-2 Pay Equity by level and region

Region	2021 Pay Equity by level and region			
	Total	Executives	Managers	Non-Managers
U.S. & CANADA	0.02	-0.05	0.02	0.03
LATAM	0.09	-0.02	0.01	0.13
EUROPE	0.04	0.07	0.05	0.01
AMEA	0.02	0.15	-0.09	0.08
Total	0.06			

Notes

- Pay equity is calculated based on compa-ratio.
- Close to 0 = there is no gap between the compensation of men and women at that level/region
- > 0 (positive) = men have higher remuneration than women at that level/region
- < 0 (negative) = women have higher remuneration than men (no gap) at that level/region

GRI (2018) 403-9: Incident rates ✓

Hours worked	2021		
	Employees	Contractors	Total: Employees and Contractors
U.S. & CANADA	4,223,533	527,730.13	4,751,263
LATAM	22,263,458	8,791,934	31,055,391
EUROPE	10,293,441	1,407,724	11,701,165
AMEA	10,558,525	1,111,294	11,669,820
Total	47,338,957	11,838,682	59,177,639

Number of lost time incidents (LTI)	2021		
	Employees	Contractors	Total: Employees and Contractors
U.S. & CANADA	17	1	18
LATAM	36	14	50
EUROPE	16	4	20
AMEA	17	2	19
Total	86	21	107

Number of incidents by region (TRI)	2021		
	Employees	Contractors	Total: Employees and Contractors
U.S. & CANADA	46	6	52
LATAM	53	15	68
EUROPE	24	8	32
AMEA	22	6	28
Total	145	35	180

All Orbia incident rates 2021	2021		
	Employees	Contractors	Total: Employees and Contractors
Total Recordable Incident Rate (TRIR)	0.61	0.59	0.61
Lost Time Incident Rate (LTIR)	0.36	0.35	0.36
Fatality rate	0.008	0	0.007



Recordable Incident rates by region (TRIR)	Employees			Contractors			Total: Employees and Contractors		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
U.S. & CANADA	2.03	2.62	2.18	0.00	1.11	2.27	1.85	2.43	2.19
LATAM	0.52	0.35	0.48	0.35	0.46	0.34	0.48	0.38	0.44
EUROPE	0.76	1.00	0.47	2.10	2.61	1.14	0.88	1.16	0.55
AMEA	0.85	0.84	0.42	0.00	0.07	1.08	0.68	0.61	0.48
Total	0.76	0.77	0.61	0.48	0.63	0.59	0.71	0.75	0.61
Lost time incident rates by region (LTIR)	Employees			Contractors			Total: Employees and Contractors		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
U.S. & CANADA	0.37	0.37	0.81	0.00	0.37	0.38	0.34	0.37	0.76
LATAM	0.26	0.22	0.32	0.19	0.35	0.32	0.25	0.25	0.32
EUROPE	0.28	0.49	0.31	0.65	1.14	0.57	0.31	0.55	0.34
AMEA	0.77	0.65	0.32	0.00	0.07	0.36	0.62	0.48	0.33
Total	0.36	0.36	0.36	0.20	0.37	0.35	0.33	0.36	0.36
Fatalities	Employees			Contractors			Total: Employees and Contractors		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
U.S. & CANADA	0	0	0	0	0	0	0	0	0
LATAM	0	1	2	1	0	0	1	1	2
EUROPE	0	0	0	0	0	0	0	0	0
AMEA	0	0	0	0	0	0	0	0	0
Total	0	1	2	1	0	0	1	1	2
Fatality rates	Employees			Contractors			Total: Employees and Contractors		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
U.S. & CANADA	0	0	0	0	0	0	0	0	0
LATAM	0	0.009	0.018	0.027	0	0	0.006	0.007	0.013
EUROPE	0	0	0	0	0	0	0	0	0
AMEA	0	0	0	0	0	0	0	0	0
Total	0	0.005	0.008	0.019	0	0	0.004	0.004	0.007



GRI (2018) 403-10 Work-related ill-health ✓

	Employees		Contractors	
	2020	2021	2020	2021
Fatalities as a result of work related ill health	0	0	0	0
Cases of recordable work related ill health	0	0	Not measured	Not measured

Notes

- Rates are calculated on the basis of 200,000 hours. Data includes all facilities including manufacturing sites, offices, warehouses, distributions centers and R&D labs.
- Current Orbia systems do not allow for a split of recordable injuries to reflect high-consequence injuries, although these are estimated to be less than five. We are reviewing our systems to establish a reporting mechanism for high consequence injuries in the future.
- We do not record work-related ill-health cases for contractors. We are evaluating how we can obtain reliable data for future disclosure.
- Main types of work-related injuries are cuts and lacerations, strain and sprains, crush injuries (fingers) and slips and falls. Main types of work-related ill health recorded are due to general pain - not associated with specific roles.
- We regret to record two employee fatalities in 2021 caused by underground blasting activities at the Las Cuevas mine in Mexico. Full investigation protocols and corrective actions taken, including removal of all underground personnel prior to blast initiation, new blasting planning process, use of electronic blasting initiators, physical barricades and banners in place at each mine level, and redundant physical verification of all underground personnel.
- Work-related hazards are assessed through our regular safety risk assessments, and we have not identified any significant hazards that pose a risk of ill-health. Instances of work-related ill-health reported for 2021 were not identified with specific hazards.
- Work-related hazards that pose a risk of high-consequence injuries are not specifically identified as distinct from other hazards. All work-related hazards are addressed through our safety assessments and risks are minimized through targeted improvements in procedures, protocols, training and communications.
- We provide medical assistance and consultation for employees through our Health and Safety Officers at each site. All employees have access to these services.
- 100% of employees are represented by Health and Safety Committees or equivalent.



COMMUNICATION ON PROGRESS



This is our **Communication on Progress** in implementing the Ten Principles of the **United Nations Global Compact** and supporting broader UN goals.

We welcome feedback on its contents.

Orbia endorses the Universal Declaration of Human Rights adopted by the United Nations and condemns all forms of human rights abuse, as stated in our Human Rights Policy. Orbia became a signatory to the UNGC at the participant tier level in 2018, committing to uphold and promote UNGC principles within our spheres of influence. This is our fourth Communication on Progress and we will report annually.

UN Global Compact Principles	Our Position
1 Businesses should support and respect the protection of internationally proclaimed human rights.	At Orbia, we acknowledge, respect and uphold human rights. Our Code of Ethics binds all employees around the world to the highest ethical standards and we reinforce ethical practices with communication, training and immediate attention to ethical issues as they arise. We maintain a Human Rights policy confirming our support for the Universal Declaration of Human Rights and other universally accepted standards. We drive similar standards throughout our supply chain.
2 Businesses should make sure that they are not complicit in human rights abuses.	
3 Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.	We respect the rights of employees to freedom of association and collective bargaining. We aim to maintain a collaborative, open and positive relationship with employees and address issues relating to their rights in a positive manner. We drive similar standards throughout our supply chain.
4 Businesses should support the elimination of all forms of forced and compulsory labor.	We do not engage in any practice which could be construed as forced labor. All Orbia employees are legally employed and join our business of their own free will. We drive similar standards throughout our supply chain.
5 Businesses should support the effective abolition of child labor.	We respect and support the rights of all children, and we are committed to preventing harm and actively safeguarding their interests. We do not employ children in any part of our business. We drive similar standards throughout our supply chain.
6 Businesses should support the elimination of discrimination in respect of employment and occupation.	We maintain a policy of equal opportunity and enjoy a high level of diversity among our workforce around the world. A key Orbia value is embracing diversity. Recruitment and human resources policies are designed to nurture inclusive practices for new and current employees in all matters relating to their employment with Orbia. See our Diversity and Inclusion policy .
7 Businesses should support a precautionary approach to environmental challenges.	Many of Orbia's products are designed to minimize environmental impacts, and provide benefits to our consumers, and to support sustainable construction, smart cities, sustainable agriculture, water conservation and waste reduction. Such products form part of our customers' own greenhouse gas emission reduction programs as they enable carbon-efficient operations. In our own operations, we work to reduce our toxic emissions, drive down our carbon and water footprints and act as environmental stewards in all that we do.
8 Businesses should undertake initiatives to promote greater environmental responsibility.	
9 Businesses should encourage the development and diffusion of environmentally friendly technologies.	
10 Businesses should work against corruption in all its forms, including extortion and bribery.	We are committed to behaving with integrity and acting against all forms of corruption. Our Code of Ethics and our Integrity and Anticorruption Handbook guide our actions binding all employees to uphold these policies.



WE SUPPORT CEO WATER MANDATE

The CEO Water Mandate is a special initiative of the UN Secretary-General and the UN Global Compact, providing a multi-stakeholder platform to advance corporate water sustainability policies and practices. Orbia became a signatory to the CEO Water Mandate in 2018, confirming our commitment to sustainable water management and practices. This is our third progress report to the CEO Water Mandate, as part of our GRI-based sustainability disclosure.

Water Mandate Principles		Our progress
Element 1	Direct operations	In 2021, we continued our water risk assessment program, covering the full spectrum of watershed risks (physical, regulatory and community-related). Vestolit completed assessments for all resin plants in Mexico and Colombia (representing 42% of Orbia's consumption and located in water stress areas). Based on these: context-based water targets for each of these sites are being analyzed; risk mitigation plans are being developed; alternative water sources are being evaluated; and water risks are being embedded in overall risk processes. For further details, see section: Water
Element 2	Supply chain and watershed management	From 2020, we include water performance as part of our EcoVadis-based screening of suppliers and take a risk-based approach to managing performance, including watershed risks.
Element 3	Collective action	See section on our support for Water Funds in Latin America and other initiatives: Water
Element 4	Public policy	We do not make political contributions. We support public policy on water through our engagement with industry associations and support for Water Funds. See section Water + Thriving Communities
Element 5	Community engagement	See section Thriving Communities for examples of community support and engagement in Water Access, Sanitation and Hygiene (WASH) initiatives.
Element 6	Transparency	We report on our water consumption and other water impacts in line with GRI and SASB standards.

